

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA**

FEDERAL TRADE COMMISSION,

Plaintiff,

v.

RAG-STIFTUNG *et al.*,

Defendants.

Civil Action No. 19-2337 (TJK)

MEMORANDUM OPINION

Hydrogen peroxide (H₂O₂) is a veritable swiss army knife of chemicals. Often an environmentally friendly alternative to other substances, it bleaches paper, treats wastewater, disinfects knee scrapes, fuels rockets, and plays a role in manufacturing semiconductors, to name a few of its myriad applications. In November 2018, two of the five North American suppliers of hydrogen peroxide, Evonik and PeroxyChem, announced a proposed \$625 million merger, and not long after, the Federal Trade Commission (FTC) launched an investigation into the potential anticompetitive effect of the merger. After a nine-month investigation, the FTC filed both an administrative complaint and this preliminary injunction action under Section 13(b) of the Federal Trade Commission Act, 15 U.S.C. § 53(b), and Section 7 of the Clayton Act, 15 U.S.C. § 18. The Court held a two-week evidentiary hearing in November 2019, during which it heard from twenty fact witnesses and two experts and received hundreds of exhibits.

The FTC seeks a preliminary injunction barring Evonik's acquisition of PeroxyChem, and it has the burden of showing that it is likely the proposed merger will substantially lessen competition in a relevant market. But the FTC made an important misstep. Rather than recognizing how hydrogen peroxide suppliers compete for customers served by its countless end

uses—accounting for products’ variations in purity, concentration, stabilizer chemicals, profitability, and even regulatory approval—the FTC pleaded and argued for a single market for all “non-electronics” hydrogen peroxide. And because evaluating a merger’s competitive effects on a market requires the FTC to properly define a market in terms of both product and geography, that oversimplification all but precludes the Court from siding with it. For the reasons explained below, the Court concludes that the FTC has not made out its prima facie case, which requires it to show undue concentration for a particular product in a particular geographic area, and it has not otherwise shown a likelihood that the proposed Evonik-PeroxyChem merger will substantially harm competition. The Court must therefore deny the FTC’s motion for a preliminary injunction, ECF No. 3.¹

I. Background

A. Hydrogen Peroxide Suppliers

There are five suppliers of hydrogen peroxide in North America: Evonik, PeroxyChem, Solvay, Arkema, and Nouryon. DPFCL at 13 ¶ 34. Evonik is an international chemical company based in Germany and controlled by Defendant RAG-Stiftung. *Id.* at 5 ¶ 3. Evonik produces hydrogen peroxide at three North American plants located in Mobile, Alabama; Gibbons, Alberta; and Maitland, Ontario. PPFCL at 1 ¶ 1. Evonik seeks to acquire PeroxyChem, a Philadelphia-based international manufacturer of hydrogen peroxide, persulfates, and peracetic acid. DPFCL at 5 ¶ 5. PeroxyChem produces hydrogen peroxide at two North

¹ The documents submitted to the Court in this matter include: Complaint, ECF No. 1 (“Compl.”); Plaintiff’s Memorandum in Support of Motion for Preliminary Injunction, ECF No. 45-1 (“Br.”); Defendants’ Opposition to Plaintiff’s Memorandum, ECF No. 56-1 (“Opp.”); Plaintiff’s Proposed Findings of Fact and Conclusions of Law, ECF No. 137-1 (“PPFCL”); Defendants’ Proposed Findings of Fact and Conclusions of Law, ECF No. 138-1 (“DPFCL”). The Court hereby incorporates the FTC’s Glossary of Hearing Witnesses, Deponents, and Declarants, PPFCL at x–xi.

American plants in Bayport, Texas, and Prince George, British Columbia. PPFCL at 1–2 ¶ 2. Solvay has one plant in Deer Park, Texas—fewer than ten miles from PeroxyChem’s Bayport plant—and one plant in Longview, Washington; Arkema has one plant in Memphis, Tennessee, and one in Becancour, Quebec; and Nouryon has a plant in Columbus, Mississippi. DPFCL at 13–14 ¶ 35.

B. The Manufacture of Hydrogen Peroxide Products

To manufacture hydrogen peroxide, suppliers move a working solution through a hydrogenation, oxidation, and extraction process, continuously and nearly 365 days a year. PPFCL at 4 ¶ 12; DPFCL at 8 ¶ 16. The process produces “crude” hydrogen peroxide. PPFCL at 4 ¶ 12. Suppliers stabilize the crude with chemical additives to prevent the product from decomposing and concentrate or distill it to produce a marketable product known as “standard grade” hydrogen peroxide, which is the lowest purity sold. *Id.*; DPFCL at 9 ¶¶ 18–20. Suppliers formulate standard grade hydrogen peroxide at different concentration levels and add stabilizers to serve a variety of end uses, like bleaching pulp and paper (the largest hydrogen peroxide end use) and textiles; it is also used in wastewater treatment and in the mining and oil and gas industries. PPFCL at 4 ¶ 13; Dumas Hrg. Tr. 235:1–3; Suter Hrg. Tr. 408:8–14; Costanzo Hrg. Tr. 1223:6–13; Montag Hrg. Tr. 1566:5–1567:2, 1600:23–1601:3. Stabilizer packages are proprietary, and a stabilizer like tin that works well for some applications does not for others. DPFCL at 7–8 ¶ 13; Corson Hrg. Tr. 666:6–667:16; DX0348; PX1522-001 to -002; PX1055-001.

Suppliers can also purify standard grade to make “specialty grade” hydrogen peroxide. PPFCL at 9 ¶ 27; DPFCL at 9–10 ¶¶ 21–22. This higher grade or purity level also serves a variety of end uses. For example, in the chemical synthesis space, manufacturers use specialty grade hydrogen peroxide to make sodium chlorite, organic peroxides, and epoxidized soybean

oil; in the home and personal care space, specialty grade is used in products for hair and teeth bleaching and in contact lens solutions; and in the food packaging space, manufacturers use it as a disinfectant for aseptic packaging. DPFCL at 6–7 ¶ 11. These specialty grade applications not only require specific concentrations and stabilizers, but many of them also require FDA or EPA approval before purchasers can put them toward their intended uses. *See* DPFCL at 8 ¶ 14.

A few suppliers further purify specialty grade to produce “pre-electronics grade” hydrogen peroxide. DPFCL at 11 ¶ 27. Only Evonik and Arkema sell pre-electronics grade. *Id.* Manufacturing this grade of hydrogen peroxide, a product for which suppliers measure impurities in “parts per billion,” Hamann Hrg. Tr. 1281:13, requires additional equipment, including a second reverse osmosis unit, more testing (several times a day), specially trained personnel, a specially equipped room and laboratory, and [REDACTED]

[REDACTED]. Hamann Hrg. Tr. 1282:3–1286:16. PeroxyChem and Solvay produce a purified hydrogen peroxide “feedstock” that is a precursor to their production of *electronics* grade hydrogen peroxide, but the feedstock is not marketed to customers as pre-electronics grade hydrogen peroxide. Montag Hrg. Tr. 1528:1–5; Kramer Hrg. Tr. 1635:19–1636:7; Suter Hrg. Tr. 412:11–17. Over the years, [REDACTED]

[REDACTED] Hancock Decl. ¶¶ 22–23, JX0001-004; Montag Hrg. Tr. 1531:23–1532:1; Suter Hrg. Tr. 434:24–435:11; Hill Hrg. Tr. 2080:22–23; JX0001-001; PPFCL at 10–11 ¶¶ 32–33.

Some suppliers have the capability to refine pre-electronics grade even further to make the highest purity “electronics grade” hydrogen peroxide. Electronics grade is sold to

semiconductor manufacturers to clean and etch silicon microchips. DPFCL at 11–13 ¶¶ 27, 33. MGC, PeroxyChem, and Solvay sell electronics grade hydrogen peroxide. *Id.* at 13 ¶ 33.

As an engineering matter, a plant can only commit 40 to 50 percent of its output to specialty grade hydrogen peroxide, and only 60 percent of that specialty grade can be purified into pre-electronics grade, leaving around 36 pounds of pre-electronics grade for every 100 pounds of crude. [REDACTED]

[REDACTED]; JX0151-015. Suppliers can shift production between different grades of hydrogen peroxide at a plant merely by adjusting a valve. Hamann Hrg. Tr. 1322:24–1323:13; *see, e.g.*, Suter Hrg. Tr. 406:6–14 (“We get customer input, we look at historical data, and we operate with basically a 90-day rolling forecast. We can make any grade at any time of the month as long as we’re forecasting it properly.” (cleaned up)).

C. The Sale of Hydrogen Peroxide Products

Hydrogen peroxide suppliers sell their products by the pound from around 30 cents per pound to over a dollar; standard grade is generally the cheapest (and least profitable), then specialty grade, pre-electronics grade, and electronics grade. DPFCL at 14 ¶¶ 36–38; JX0066-43 fig. 10; JX0151-022; [REDACTED]. The annual capacity of hydrogen peroxide plants ranges from around [REDACTED] million pounds (Evonik’s Maitland plant) to [REDACTED] million pounds (PeroxyChem’s Bayport plant). PPFCL at 26–27 ¶¶ 83–93. A significant component of each product’s price is transportation cost because hydrogen peroxide is typically heavily diluted with water when it is delivered via railcars and trucks. DPFCL at 15 ¶ 40. As a result, the distance between customers and plants is a major factor in competition between suppliers. *Id.* ¶ 41.

Hydrogen peroxide suppliers compete for customers across grades and end uses through blind bidding contests for high-volume, long-term contracts. *Id.* ¶ 42. A customer publishes a

request for proposal (RFP) for a given location, specifying the hydrogen peroxide product, volume, and contract length sought; suppliers submit confidential bids; and then the customer usually lets one or more of the bidders know how competitive their bid is (without sharing specific prices) so that they will lower their bid price. *See id.* at 15 ¶¶ 42, 44; *id.* at 66–67 ¶ 173. This process produces substantial cost savings for hydrogen peroxide customers, and prices have generally decreased the last few years in part as a result. *See* DPFCL at 53–55, 66–67 ¶¶ 143–46, 173; Hill Rpt., JX0066-097 to -099 figs. 44–46.

D. Procedural History

Evonik announced its intent to acquire PeroxyChem for \$625 million in November 2018. JX0078-011 to -013. The two firms filed a pre-merger notification with the FTC pursuant to the Hart-Scott-Rodino Improvements Act, 15 U.S.C. § 18a. Compl. ¶ 20. The FTC then launched a nine-month investigation, during which Defendants produced millions of pages of documents and the FTC interviewed or deposed more than 50 industry participants. *Opp.* at 2. The FTC voted on August 2, 2019, to commence an administrative proceeding to challenge the acquisition under Section 5 of the Federal Trade Commission Act, 15 U.S.C. § 53(b), and Section 7 of the Clayton Act, 15 U.S.C. § 18, alleging that the proposed merger will substantially lessen competition. Compl. ¶ 9. The FTC also filed the instant action and moved for a preliminary injunction, ECF No. 3, and the parties entered into a stipulated restraining order preventing Defendants from closing the proposed transaction until five business days after the Court rules on the motion, ECF No. 9. The parties have delayed the administrative proceeding pending the Court's decision. *Mahr Hrg. Tr.* 2438:3–10.

Within days of the FTC moving for a preliminary injunction in this action, Evonik and PeroxyChem agreed on a divestiture of PeroxyChem's plant in Prince George, British Columbia. Share Purchase Agreement, JX0147-017. If the merger closes, a new competitor, international

chemical producer United Initiators GMBH (UI), will purchase the plant for [REDACTED]. *Id.* The Canadian Competition Bureau investigated the proposed merger with PeroxyChem and the divestiture of the Prince George plant to UI and entered into a Consent Agreement with Evonik that approves both. Consent Agreement (Jan. 13, 2020), ECF No. 141-1 at 1–2, 10, 12–13. The proposed divestiture of the Prince George plant means that the FTC’s challenge to Evonik’s acquisition of PeroxyChem only concerns its other hydrogen peroxide plant in Bayport, Texas, setting aside Evonik’s acquisition of PeroxyChem’s unrelated assets for other chemicals. *See* DPFCL at 6 ¶ 7.

II. Legal Standard

Section 7 of the Clayton Act, 15 U.S.C. § 18, prohibits mergers “where in any line of commerce or in any activity affecting commerce in any section of the country, the effect of such acquisition . . . may be substantially to lessen competition, or tend to create a monopoly.” “Section 7 involves *probabilities*, not certainties or possibilities,” *United States v. Baker Hughes, Inc.*, 908 F.2d 981, 984 (D.C. Cir. 1990), and a plaintiff must show that the substantial lessening of competition will be “sufficiently probable and imminent.” *United States v. Marine Bancorp.*, 418 U.S. 602, 623 n.22 (1974) (internal quotation omitted); *see United States v. Gen. Dynamics Corp.*, 415 U.S. 486, 505 (1974).

If the FTC “has reason to believe that a corporation is violating, or is about to violate, Section 7 of the Clayton Act, the FTC may seek a preliminary injunction” from a federal district court under Section 13(b) of the Federal Trade Commission Act, 15 U.S.C. § 53(b), “to prevent a merger pending the Commissioner’s administrative adjudication of the merger’s legality.” *FTC v. H.J. Heinz Co.*, 246 F.3d 708, 714 (D.C. Cir. 2001) (quoting *FTC v. Staples, Inc.*, 970 F. Supp. 1066, 1070 (D.D.C. 1997) (*Staples I*)). Section 13(b) provides for a preliminary injunction to block a merger when “such action would be in the public interest,” after “weighing the equities

and considering the Commission’s likelihood of ultimate success.” 15 U.S.C. § 53(b); *see Heinz*, 246 F.3d at 726.

To obtain a preliminary injunction, the FTC “is not required to prove, nor is the court required to find, that the proposed merger would in fact violate Section 7 of the Clayton Act.” *Staples I*, 970 F. Supp. at 1070. That determination is reserved for the FTC through its administrative proceeding. *Id.* However, the FTC must show that there is a “reasonable probability” or “appreciable danger” that the acquisition may substantially lessen competition. *Id.* at 1072; *Heinz*, 246 F.3d at 713, 719. It can do so by raising “questions going to the merits so serious, substantial, difficult and doubtful as to make them fair ground for thorough investigation, study, deliberation and determination by the FTC in the first instance and ultimately by the Court of Appeals.” *Heinz*, 246 F.3d at 714–15 (internal citation omitted). That burden “is not insubstantial, and a showing of a fair or tenable chance of success on the merits will not suffice for injunctive relief.” *FTC v. Arch Coal, Inc.*, 329 F. Supp. 2d 109, 116 (D.D.C. 2004) (cleaned up); *see FTC v. Wilh. Wilhelmsen Holding ASA*, 341 F. Supp. 3d 27, 44 (D.D.C. 2018) (“A preliminary injunction in this context remains an extraordinarily drastic remedy, especially since as a result of the short life-span of most tender offers, the issuance of a preliminary injunction blocking an acquisition or merger may prevent the transaction from ever being consummated.” (cleaned up)).

To assess the FTC’s likelihood of success on the merits, the Court applies the D.C. Circuit’s burden-shifting framework set forth in *Baker Hughes*, 908 F.2d at 982–83. *See Heinz*, 246 F.3d at 715. First, the FTC bears the prima facie burden of showing that the Evonik-PeroxyChem merger will lead to “undue concentration in the market for a particular product in a particular geographic area.” *Baker Hughes*, 908 F.2d at 982; *see Arch Coal*, 329 F. Supp. 2d at

117. That showing establishes a presumption that the merger will substantially lessen competition. *Baker Hughes*, 908 F.2d at 982. Defendants can then rebut this presumption by demonstrating that the FTC’s prima facie case and market-share statistics inaccurately predict the merger’s probable effects in the relevant market. *Id.* at 991. If Defendants’ rebuttal is successful, the burden of producing further evidence of anticompetitive effects shifts to the FTC “and merges with the ultimate burden of persuasion which remains with the [FTC] at all times.” *Id.* at 983.

In addition to assessing the FTC’s prima facie case and any rebuttal evidence, in deciding whether to grant preliminary injunctive relief, the Court must weigh the equities. Because the public’s interest in effective enforcement of the antitrust laws is paramount, a “showing of likelihood of success creates a presumption in favor of preliminary injunctive relief.” *Heinz*, 246 F.3d at 726. “Conversely, absent a likelihood of success on the merits, equities alone will not justify an injunction.” *Arch Coal*, 329 F. Supp. 2d at 116.

The Supreme Court has also stressed that courts must judge “the probable anticompetitive effects of the merger” “functionally” and based on “a further examination of the particular market—its structure, history and probable future.” *Gen. Dynamics*, 415 U.S. at 498 (quoting *Brown Shoe Co. v. United States*, 370 U.S. 294, 320–21 & n.38 (1962)) (cleaned up). Therefore, “antitrust theory and speculation cannot trump facts, and even Section 13(b) cases must be resolved on the basis of the record evidence relating to the market and its probable future.” *Arch Coal*, 329 F. Supp. 2d at 116–17.

III. Analysis

A. The FTC’s Prima Facie Case

For the FTC to show a likelihood of success on the merits and justify a preliminary injunction blocking the Evonik-PeroxyChem merger, it must first meet its prima facie burden by

(1) defining a relevant product market, (2) defining a relevant geographic market, and (3) showing undue concentration in that combined market. *Baker Hughes*, 908 F.2d at 983.

1. Defining the Relevant Market

“The relevant market is the ‘area of effective competition’ within which the defendants operate.” *United States v. E. I. du Pont de Nemours & Co.*, 353 U.S. 586, 649 (1957) (quoting *Standard Oil Co. of Cal. v. United States*, 337 U.S. 293, 299 n.5 (1949)). Defining the relevant market is a “necessary predicate” to finding a Clayton Act violation because the proposed merger “must be one which will substantially lessen competition within the area of effective competition.” *Id.* at 593 (internal quotations omitted); see *Baker Hughes*, 908 F.3d at 982 (government must “show[] that a transaction will lead to undue concentration in the market for a particular product”). The scope of the relevant market also dictates the analysis of market power and the merger’s anticompetitive effects. See *United States v. Sungard Data Sys., Inc.*, 172 F. Supp. 2d 172, 181 (D.D.C. 2001); *FTC v. Cardinal Health, Inc.*, 12 F. Supp. 2d 34, 45 (D.D.C. 1998). “The FTC bears the burden of proof and persuasion in defining the relevant market.” *FTC v. Arch Coal, Inc.*, 329 F. Supp. 2d 109, 119 (D.D.C. 2004).

A relevant market has two parts: a product market and a geographic market, *Marine Bancorp.*, 418 U.S. at 618. The relevant product market identifies the object of Defendants’ competition, and the relevant geographic market identifies where that competition takes place. See *Arch Coal*, 329 F. Supp. 2d at 119.

The parties sharply contest both aspects of the relevant market. The FTC argues that the relevant market is non-electronics grade hydrogen peroxide within two separate geographic markets, the Pacific Northwest and the Southern and Central United States. Defendants argue that both components of the FTC’s proposed market are overbroad and inconsistent with the commercial realities of the industry. The Court agrees with Defendants that the FTC has not met

its burden of establishing its prima facie case because it has not identified a relevant market within which to analyze the merger's possible anticompetitive effects. That failure begins and ends with the FTC's theory of supply-side substitution, or "swinging," a substantial departure from the typical way in which a product market is defined.

a. The FTC's Product Market and Alternative Product Markets

The Court begins with the FTC's proposed product market for the sale of standard, specialty, and pre-electronics grade hydrogen peroxide, which it calls the "non-electronics" hydrogen peroxide market. PPFCL at 84 ¶¶ 23–25.

Product markets are almost always defined by demand substitution. *See Heinz*, 246 F.3d at 718; *Wilhelmsen*, 341 F. Supp. 3d at 45 (demand substitution the "touchstone" of product market definition). Demand substitution describes "customers' ability and willingness to substitute away from one product to another in response to a price increase or a corresponding non-price change such as a reduction in product quality or service." Merger Guidelines § 4. Demand substitution polices the "outer boundaries of a product market" and is governed by either (1) consumers' "reasonable interchangeability of use" or (2) the "cross-elasticity of demand" (price sensitivity) between a product and substitutes for it. *Brown Shoe*, 370 U.S. at 325. When aggregating products into a relevant market, courts focus on demand substitution because it illuminates whether customers can switch to one product and constrain anticompetitive pricing in another. *United States v. Aetna Inc.*, 240 F. Supp. 3d 1, 20 (D.D.C. 2017); *see FTC v. Swedish Match*, 131 F. Supp. 2d 151, 157 (D.D.C. 2000); Hill Hrg. Tr. 2076:15–25. For instance, if customers would switch from Jif peanut butter to Peter Pan following a price increase, those two products are more likely to be included in a relevant product market.

A relevant product market also “must be drawn narrowly to exclude any other product to which, within reasonable variations in price, only a limited number of buyers will turn; in technical terms, products whose ‘cross-elasticities of demand’ are small.” *Times-Picayune Pub. Co. v. United States*, 345 U.S. 594, 612 n.31 (1953); see *Arch Coal*, 329 F. Supp. 2d at 120 (“Relevant market analysis is based on the ‘narrowest market’ principle.”); Merger Guidelines § 4.1.1 (product market defined based on “smallest relevant market satisfying the hypothetical monopolist test”). For example, Jif may compete with mayonnaise “in the overall marketplace” for sandwich spreads, but that does not necessarily mean both should “be included in the relevant product market for antitrust purposes,” *Staples I*, 970 F. Supp. at 1075.

Courts use two approaches to help define a relevant product market. The first is the “hypothetical monopolist test.” *FTC & DOJ Horizontal Merger Guidelines* (2010), § 4.1.1. The test asks whether a hypothetical monopolist controlling the products in the alleged market could profitably impose at least a small but significant and non-transitory increase in price (SSNIP), generally assumed to be about five percent, on at least one product in the market.² *FTC v. Staples, Inc.*, 190 F. Supp. 3d 100, 121–22 (D.D.C. 2016) (*Staples II*). If a hypothetical monopolist can profitably impose a SSNIP, the products may comprise a relevant market. *Id.* at 121. The second approach weighs the *Brown Shoe* factors: “industry or public recognition of the [relevant market] as a separate economic entity, the product’s peculiar characteristics and uses,

² The Merger Guidelines, while not binding on courts, offer persuasive guidance in examining competitive effects. See *Heinz*, 246 F.3d at 716 n.9. They also recognize that a SSNIP may be “larger or smaller than five percent” based on industry specifics, § 4.1.2, but the FTC’s uncontested position is that a SSNIP of “about five percent” is appropriate. PPFCL at 2 ¶ 5.

unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors.” *Brown Shoe*, 370 U.S. at 325; see *Wilhelmsen*, 341 F. Supp. 3d at 47.³

While the Merger Guidelines explicitly state that “[m]arket definition focuses solely on demand substitution factors,” § 4, they provide an exception to that general rule when “supply side substitution” may be used to aggregate products that are not demand substitutes into one market, *id.* § 5.1 & n.8. Rather than relying on consumers’ ability to constrain prices, supply-side substitution or elasticity focuses on *suppliers’* responsiveness to price increases and their ability to constrain anticompetitive pricing by readily shifting what they produce. See *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1436 (9th Cir. 1995); Rothman Rpt., JX0075-034 (aggregating products that are supply-side substitutes better “reflect[s] suppliers’ competitive significance”). According to supply-side substitution theory, the higher the cross-elasticity of supply—“the capability of . . . production facilities to be converted to produce a substitute product”—“the more likely it is that the alternative products are to be counted in the relevant market.” *Cardinal Health*, 12 F. Supp. 2d at 46; see *Brown Shoe*, 370 U.S. at 325 n.42 (“The cross-elasticity of production facilities may also be an important factor in defining a product market.”); *Rothery Storage & Van Co. v. Atlas Van Lines, Inc.*, 792 F.2d 210, 218 (D.C. Cir. 1986) (same).

The Merger Guidelines offer a helpful shorthand for supply side substitution—“swinging.” Suppliers are said to have “readily available ‘swing’ capacity” to “rapidly” enter a product market—and therefore to constrain anticompetitive pricing—if “supply side substitution

³ “The *Brown Shoe* practical indicia may indeed be old school, and its analytical framework relegated ‘to the jurisprudential sidelines.’ But *Brown Shoe* remains the law, and this court cannot ignore its dictates.” *FTC v. Sysco Corp.*, 113 F. Supp. 3d 1, 27 n.2 (D.D.C. 2015) (quoting *FTC v. Whole Foods Market, Inc.*, 548 F.3d 1028, 1059 (2008) (Kavanaugh, J., dissenting)) (cleaned up).

is” (1) “nearly universal among the firms selling one or more of a group of products,” (2) “easy,” and (3) “profitable.” Merger Guidelines § 5.1 & n.8 (cleaned up); PPFCL at 84–85 ¶ 24. The parties’ experts “agree that proof of each of these three conditions is required before a relevant product market may be defined based on supply-side considerations,” DPFCL at 23 ¶ 68, and the Court sees no reason to disagree.⁴ *Rebel Oil* offers a helpful illustration of supply-side substitution. The court in that case grouped the sale of self-serve and full-service gasoline into one relevant product market because it found that “sellers of full-serve gasoline can easily convert their full-serve pumps, at virtually no cost, into self-serve, cash-only pumps, expanding output and thus constraining any attempt by [the defendant] to charge [higher] prices for self-serve gasoline.” 51 F.3d at 1436.

i. Swinging Between Standard, Specialty, and Pre-Electronics Grade Hydrogen Peroxide

The FTC’s only basis for aggregating standard, specialty, and pre-electronics grade hydrogen peroxide into a single market is supply-side substitution. Rhilinger Hrg. Tr. 2272:14–16. The Court therefore turns to the evidence about whether suppliers’ swinging between production of these grades is nearly universal, easy, and profitable, as set forth in the Merger

⁴ The 2010 Merger Guidelines’ reference to swinging postdates the very few cases that have considered supply-side substitution, so those cases do not reference the three swinging requirements. Nonetheless, the case law is generally consistent with them. *See, e.g., Brown Shoe*, 370 U.S. at 366–68 (Harlan, J., dissenting in part, concurring in part) (swinging between women’s and men’s shoes); *United States v. Colum. Steel Co.*, 334 U.S. 495, 510–11 (1948) (swinging production of different rolled steel products); *Rebel Oil*, 51 F.3d at 1436 (swinging between offering full-service and self-serve gasoline); *Virtual Maint., Inc. v. Prime Comput., Inc.*, 11 F.3d 660, 665 (6th Cir. 1993) (swinging between computer systems with and without software updates included); *FTC v. Elders Grain, Inc.*, 868 F.2d 901, 907 (7th Cir. 1989) (swinging between variations of industrial dry corn); *cf. FTC & DOJ Horizontal Merger Guidelines* §§ 1.32–1.322 (1997) (describing similar parameters for defining aggregate product market based on supply side substitution).

Guidelines. The Court finds that the FTC has failed to meet its burden of showing that supply-side substitution across these three grades meets any of the three requirements.

(A) Nearly Universal

The Court cannot conclude, as the FTC urges, that swinging across these grades—while present to some degree—is “nearly universal” among the market participants. Merger Guidelines § 5.1 n.8.

First, and most obviously, three of the five North American suppliers of hydrogen peroxide do not, at present, swing to the production of pre-electronics grade hydrogen peroxide: they simply do not produce that product. PeroxyChem and Solvay produce a purified hydrogen peroxide “feedstock” that is a precursor to their production of electronics grade hydrogen peroxide. Montag Hrg. Tr. 1528:1–5; Kramer Hrg. Tr. 1635:19–1636:7; Suter Hrg. Tr. 412:11–17. But just because they further refine this feedstock to make electronics grade hydrogen peroxide does not mean it is pre-electronics grade for swinging purposes. In fact, PeroxyChem and Solvay do not market or sell their feedstock to customers as pre-electronics grade hydrogen peroxide. JX0001-004, Hancock Declaration ¶¶ 22–23; Montag Hrg. Tr. 1531:23–1532:1; Suter Hrg. Tr. 434:24–435:11. For that reason, they do not constrain the prices of pre-electronics grade hydrogen peroxide sold by Evonik and Arkema. [REDACTED]

[REDACTED] Radlinski Hrg. Tr. 572:4–6, 572:18–23. Swinging is not nearly universal between grades of hydrogen peroxide where a majority of suppliers do not swing into one of the three grades.

Second, although all suppliers produce hydrogen peroxide for more than one end use, some do not swing into specialty grade hydrogen peroxides formulated for specific end uses. For example, Evonik does not sell an aseptic packaging product in the United States, and Nouryon

does not make one at all. Suter Hrg. Tr. 411:18–412:7; Corson Hrg. Tr. 597:14–22, 672:12–16; PX2187–040. The tin stabilizer in Evonik’s hydrogen peroxide prohibits it from marketing a chemical synthesis product and from obtaining EPA approval to market hydrogen peroxide biocide products. Corson Hrg. Tr. 666:6–667:16; DX0348; PX1522-001 to -002; PX1055-001. Some suppliers also do not swing into specialty grade hydrogen peroxide formulated for medical sterilization, contact lens solution production, and rocket propulsion. DPFCL at 87 ¶ 234 n.537.

The FTC tries to waive away this evidence by arguing that specialty grade hydrogen peroxide formulated for those various end uses to which suppliers cannot swing comprises a small percentage “of all H₂O₂ in North America.” PPFCL at 16 ¶ 50. But the FTC decided to include specialty grade hydrogen peroxide in its proposed product market, and this argument says nothing about the ability—or inability—of various suppliers to swing into different specialties. The FTC has not provided evidence, as it must to establish a product market based on swinging *across grades*, see *Arch Coal, Inc.*, 329 F. Supp. 2d at 119, that shows the portion of the *specialty grade* market to which suppliers actually do swing.⁵

Finally, it bears noting that much of what the FTC characterizes as swinging in the hydrogen peroxide market is not the sort of activity that constrains prices in the way the Merger Guidelines appear to intend. This is so because over time suppliers are moving overwhelmingly

⁵ Defendants also argue that swinging is not nearly universal because the hydrogen peroxide manufacturing process limits suppliers from swinging 100 percent of their capacity to specialty or pre-electronics grade hydrogen peroxide. See DPFCL at 25 ¶ 74; *id.* at 32 ¶ 87. While this may distinguish swinging in the hydrogen peroxide industry with swinging from the Fourdrenier paper machine, not all capacity necessarily needs to swing into a substitute market in order to constrain anticompetitive prices. To constrain prices for specialty or pre-electronics grade hydrogen peroxide, a minority of the overall hydrogen peroxide market, see Rothman Hrg. Tr. 755:21–25, suppliers need only purify a fraction of their standard grade hydrogen peroxide.

in one direction toward higher purity products that are more profitable. In fact, Defendants’ expert, Dr. Nicholas Hill, persuasively testified that a supplier’s adjustments described above—the “strategic decision to sell more of one of its products and less of another . . . *in one direction*”—is *not* swinging under the Guidelines. Hill Hearing Tr. 2078:7–10 (emphasis added). Rather, swinging “means to move back and forth producing those products”—like a swing. *Id.* 2077:24–2078:6. Dr. Hill’s prototypical swinging example is the Fourdrenier paper machine. *Id.* 2079:17–18. The machine shifts between producing containerboard for cardboard boxes and kraft paper for grocery bags. *Id.* 2079:6–2080:1. Of course, cardboard boxes and grocery bags are not demand substitutes, but based on the relative profitability of those two products at any given time, the supplier “swings” between the two “at the touch of a button.” *Id.* Dr. Hill’s conception of swinging “back and forth” is intuitive and tracks the few cases to recognize supply substitution; the Fourdrenier paper machine is like the retailer swinging between full-service and self-serve gasoline in *Rebel Oil*, 51 F.3d at 1436.

In contrast, the record suggests that the market for hydrogen peroxide reflects a long-term shift in production *in one direction*, toward high-purity, specialized products that are more profitable. *See, e.g.*, JX0151-016 [REDACTED]

[REDACTED] *id.* -017

[REDACTED]

[REDACTED]

[REDACTED] Rettig Hrg. Tr. 1047:10–15 (Evonik “focusing on specialty chemicals” because they “promise higher returns in terms of profitability.”). At the same time, suppliers are moving away from the shrinking pie that is the pulp and paper industry. As a result, these shifts in production are not as likely to constrain anticompetitive prices downward, for example, for standard grade

hydrogen peroxide, as would be the case if suppliers more commonly swung both back *and* forth between grades.

For these reasons, the record does not support the conclusion that swinging across standard, specialty, and pre-electronics grade hydrogen peroxide is nearly universal.

(B) Easy

Similarly, the Court cannot conclude that swinging across all these grades—while in some cases relatively simple—is generally “easy” for purposes of analyzing competition in the hydrogen peroxide market.

The Merger Guidelines’ section that references swinging lacks a definition for “easy,” § 5.1, but later on, the Guidelines describe “easy” entry into a market as “timely, likely, and sufficient in its magnitude, character, and scope to deter or counteract the competitive effects of concern,” § 9.⁶ These standards reflect why courts consider supply substitution in product market definition—to assess if suppliers can constrain anticompetitive prices.

The record is clear that it is easy for *some* suppliers, merely as a matter of production mechanics, to swing *some* capacity up-grade or down-grade between standard, specialty, and—for the two suppliers who currently market pre-electronics—pre-electronics grade hydrogen peroxide. Suter Hrg. Tr. 406:9–14; Myrick Hrg. Tr. 485:24–486:11; Radlinski Hrg. Tr. 539:16–19; Hamann Hrg. Tr. 1322:3–19; Kramer Hrg. Tr. 1685:8–14, 1686:10–13, 1696:4–10, 1696:25–1698:8. Evonik admitted as much to regulators before the FTC moved for a preliminary injunction. *See* PX0019-010 (“some” diversion from specialty to standard grade hydrogen

⁶ An earlier version of the Merger Guidelines—which does not use the word “easy” to describe product market definition by supply substitution—suggests that swinging into the “production and sale of the relevant product” must take place “within one year” in response to a SSNIP in the relevant product. *Merger Guidelines* § 1.321–1.322 (1997); *see also id.* § 1.321 n.14.

peroxide “could be easily and quickly accomplished at no significant cost”); PX1201-012
([REDACTED]).

But in many other cases, the evidence is just as clear that it is *not* easy for a given supplier to swing into a given grade. Although suppliers can swing 100 percent of their capacity *down-grade*, Hill Hrg. Tr. 2165:22–2166:4, the manufacturing process limits how much can swing *up-grade*; a plant can only commit [REDACTED] to [REDACTED] percent of output to specialty grade hydrogen peroxide, and only [REDACTED] percent of that specialty grade can be purified into pre-electronics grade, leaving around [REDACTED] pounds of pre-electronics grade hydrogen peroxide for every 100 pounds of crude. [REDACTED]; [REDACTED]; [REDACTED]
[REDACTED]; JX0151-015. As discussed above, this limitation does not necessarily stop suppliers from constraining prices across grades. That said, it does make it difficult [REDACTED]
[REDACTED]

[REDACTED]⁷

The FTC argues that it is easy for the three suppliers who do not market pre-electronics grade hydrogen peroxide to swing into that market. Indeed, some of Evonik’s submissions to regulators give the same impression: [REDACTED]
[REDACTED] PX0002-031; PX1201-012. And in general, the technology required to produce pre-electronics grade is not substantially different from the technology required to produce lower-grade hydrogen peroxide. *See* [REDACTED]
[REDACTED]; PX1387-010 to -017.

⁷ [REDACTED]
[REDACTED]
[REDACTED] *See* DPFCL at 25–26 ¶¶ 72, 75.

But the reality is much more complicated. Producing pre-electronics grade hydrogen peroxide requires additional equipment, including a second reverse osmosis unit, additional testing (several times a day) to ensure the equipment is working, specially trained personnel, a specially equipped room and laboratory, and [REDACTED]. [REDACTED]. Hamann Hrg. Tr. 1282:3–1286:16. Evonik has [REDACTED] years of experience supplying pre-electronics grade hydrogen peroxide to MGC from its plant in Mobile, Alabama, and it *still* cost the company [REDACTED] over more than [REDACTED] to upgrade its Gibbons, Alberta, plant to supply the same product. *See* Costanzo Hrg. Tr. 1136:5–1137:3, 1144:11–1145:9 ([REDACTED]); Hamann Hrg. Tr. 1326:25–1327:14; PX0002-031. And all of that assumes the supplier even has the technical know-how to produce pre-electronics grade hydrogen peroxide, far from a given. Were a supplier like [REDACTED]—which has never tried to produce pre-electronics grade, [REDACTED], likely because of the complexity and costs just described—to try to swing into that market, the effort would be anything but “timely, likely, [or] sufficient” to constrain prices. Merger Guidelines § 9.

Counterintuitively, it is also not easy for PeroxyChem or Solvay—which make electronics grade hydrogen peroxide—to swing into pre-electronics grade, either. The FTC produced some evidence that PeroxyChem *may* be able to market its electronics feedstock as pre-electronics grade hydrogen peroxide. But MGC—“the largest customer for pre-electronics[,] which buys on the order of 99 percent of pre-electronics that’s sold,” Hill Hrg. Tr. 2080:22–23; *see also* JX0001-001—has never approved [REDACTED] feedstock as satisfactory pre-electronics grade hydrogen peroxide after years of trying on their part. *See* PPFCL at 10–

11 ¶¶ 32–33.⁸ It is exceedingly difficult for [REDACTED] pre-electronics hydrogen peroxide, PX0002-031, a product for which suppliers measure impurities in “parts per billion,” Hamann Hrg. Tr. 1281:13. *See* DPFCL at 26–27, 29 ¶¶ 77–78, 81. That includes PeroxyChem and Solvay, even though they sell electronics grade hydrogen peroxide, it is not easy for them to sell pre-electronics grade. A world-renowned baker may sell birthday cakes; it does not mean he can come close to swinging into the cake-mix market if Betty Crocker decides to raise prices. Mahr Hrg. Tr. 2327:13–16.⁹

For these reasons, the Court cannot conclude that swinging across standard, specialty, and pre-electronics grade hydrogen peroxide is easy.

(C) Profitable

Finally, the FTC has not met its burden of showing that swinging between grades of hydrogen peroxide is likely to be profitable, because swinging down-grade is, in general, not profitable. *See* Merger Guidelines § 5.1. In other words, suppliers’ average profits increase so much up-grade that even if the price of standard grade or specialty grade increased by five or

⁸ An internal Evonik document could be construed to suggest that Evonik considers PeroxyChem and Solvay competitors for pre-electronics grade H₂O₂, *see* PPFCL at 12 ¶ 35 (citing PX1156-010), but the better reading of that chart is that it represents the entire electronics market, with Arkema and Evonik’s slices meant to signify the pre-electronics hydrogen peroxide they supply to MGC. *See* DPFCL at 27 ¶ 79.

⁹ The parties also contest the difficulty of Evonik and PeroxyChem’s swinging between grades of hydrogen peroxide in a manner that does not necessarily bear on the market’s ability to constrain prices post-merger because it does not impact other suppliers’ ability to constrain a post-merger Evonik. It is difficult for Evonik to swing into tin-free hydrogen peroxide products and aseptic packaging, but PeroxyChem currently and easily swings into each of these end uses, *see* Montag Hrg. Tr. 1516:20–1517:19, 1522:9–25, and so will a post-merger Evonik. Similarly, it is difficult for PeroxyChem to swing into pre-electronics grade hydrogen peroxide, but Evonik already markets pre-electronics hydrogen peroxide, *see* JX0001-002. Evidence of PeroxyChem’s ability to break into that market is therefore only relevant to the extent that it reflects swinging difficulties faced by other suppliers [REDACTED]

[REDACTED] PPFCL at 10–11 ¶¶ 32–33.

even ten percent, suppliers are unlikely to switch production down-grade from specialty or pre-electronics grade hydrogen peroxide.

For example, Evonik's average profit margins per pound of hydrogen peroxide are about ■ cents for standard grade, ■ cents for specialty grade (■ percent higher than standard grade), and ■ cents for pre-electronics grade (■ percent higher than standard grade and ■ percent higher than specialty grade). JX0066-043 fig. 10; Costanzo Hrg. Tr. 1143:5–1144:1, 1176:14–19 (selling standard grade instead of pre-electronics “would be a disaster on the investment economics” and “the intent [is] to sell it as specialty”). Other suppliers' margins similarly increase up-grade. See ■; JX0151-022 (showing ■ specialty grade with ■ percent higher profit margin than standard grade, pre-electronics grade with ■ percent higher than standard grade and ■ percent higher than specialty grade); Lerner Hrg. Tr. 1377:9–20 (swinging production from specialty to standard grade hydrogen peroxide would be “economic suicide” and “make[] no commercial, business or any logical sense”).

The FTC objects to using average profit margins to judge profitability. Its expert, Dr. Dov Rothman, found that some standard and specialty grade hydrogen peroxide products sell at a higher margin than some higher-grade products,¹⁰ likely because of regulatory or customer-

¹⁰ [F]or ■ percent of Evonik's volume of food grade hydrogen peroxide, Evonik's per unit margin is higher than Evonik's average per unit margin on pre-electronics grade; for ■ percent of Evonik's volume of cosmetics grade hydrogen peroxide, Evonik's per unit margin is higher than Evonik's average per unit margin on pre-electronics grade; for ■ percent of Evonik's volume of hydrogen peroxide for teeth whitening, Evonik's per unit margin is higher than Evonik's average per unit margin on pre-electronics grade. Furthermore, while food grade, cosmetics grade and hydrogen peroxide for teeth whitening are relatively low volume products for Evonik, for every 100 units of pre-electronics grade hydrogen peroxide that Evonik sells, it sells ■ units of standard grade hydrogen peroxide at a per unit margin that is higher than its average per unit margin on pre-electronics grade.

focused specifications. There are three reasons why the Court cannot find that this evidence means that swinging down-grade is generally profitable, such that it is appropriate to lump standard, specialty, and pre-electronics grade hydrogen peroxide together in a single product market.

First, the FTC has provided no data on what percentage of the standard and specialty grade markets are comprised of these supposed high-profit-margin products to which suppliers could swing. Second, this subset of high-margin standard and specialty grade products increases the average margins for those products, thereby masking what otherwise would be even *starker* profitability differences between grades. Third—and key for assessing the ability of suppliers to constrain prices—if suppliers wanted to produce more higher-margin standard or specialty grade products, they would not do so by swinging down-grade from their profitable stock of specialty and pre-electronics grade hydrogen peroxide. They would instead try to convert their existing stock of lower-margin standard and specialty grade hydrogen peroxide to higher-margin products. Hill Hrg. Tr. 2083:2–21; *see* [REDACTED] (if demand increased for standard grade hydrogen peroxide, “we would just supply them from our production of standard product,” not from pre-electronics grade product). This is consistent with suppliers’ long-term shift in production toward more profitable, specialized, and high-purity products described above.

At closing argument, the FTC argued that swinging does not have to be profitable “between every combination of products” and that a “snapshot in time” of current contracts and profitability could be misleading. Rhilinger, Hrg. Tr. 2395:14–2396:7. The Court does not

Rothman Rebuttal Rpt., PX7102-017; *see also* Rothman Hrg. Tr. 791:24–792:19.

mean to suggest that swinging must be profitable between *every* combination of products to meet this requirement. But here, there are consistent and significant profitability differences between selling standard, specialty, and pre-electronics grade hydrogen peroxide. And based on that record, including the overall trend in the market, the Court cannot conclude that in response to a SSNIP on standard or specialty grade hydrogen peroxide, suppliers would likely swing down-grade and constrain those prices; the profit margins are, in general, simply too much higher in higher grades.

To be sure, these differences in profitability suggest that suppliers may constrain anticompetitive prices in specialty or pre-electronics grade by swinging *up* from lower-margin standard grade hydrogen peroxide. But as discussed above, suppliers do not swing up-grade nearly universally because it is not easy. *See* Hill Rpt., JX0066-043 (“The rewards to producing pre-electronics grade are already so high that firms that do not produce it likely do not do so for reasons that will not change in response to a small price increase.”). And all three swinging requirements must be met to aggregate grades of hydrogen peroxide in a relevant product market.¹¹

For all the above reasons, the FTC cannot combine standard, specialty, and pre-electronics grades in a relevant product market to analyze the anticompetitive effects of the proposed merger. Therefore, the FTC’s proposed relevant product market does not support its *prima facie* case.

¹¹ The FTC also argues that its proposed market satisfies the hypothetical monopolist test because consumers would not substitute away from non-electronics hydrogen peroxide to other chemicals. *See, e.g.*, PFFCL at 85 ¶ 25. That cannot save the FTC’s overbroad market. The hypothetical monopolist test “is designed to ensure that candidate markets are not overly narrow.” Merger Guidelines § 4; *see also id.* § 4.1.1 (test “does not lead to a single relevant market”). It says nothing about whether a market is overly broad.

ii. Alternative Product Markets

Defendants argue that this failure means the Court need go no further: without a relevant product market, the FTC cannot succeed. *See* Mahr Hrg. Tr. 2401:22–2402:13. The FTC could have pleaded or argued for alternative markets, they say, but it did not, and “it’s not the Court’s job to go around and try to find that correct market.” Mahr Hrg. Tr. 2402:8–13 (cleaned up). And the FTC candidly recognizes that it has “not alleged in [the] complaint a market for standard-grade hydrogen peroxide or any other, sort of, combination of products.” Rhilinger Hrg. Tr. 2389:16–18; *see* Compl. ¶¶ 23–24 (“The relevant product market in which to assess the effects of the Acquisition is hydrogen peroxide,” excluding “electronics grade hydrogen peroxide.”).

Defendants’ argument is not without support. The FTC has the burden to prove a relevant product market when it seeks a preliminary injunction, *see Arch Coal*, 329 F. Supp. 2d at 120, a point with which the FTC does not quibble, *see* Rhilinger Hrg. Tr. 2389:9–10 (“the case law says that we need to prove a relevant market in which we can show harm”). This is so because without a relevant product market, the FTC cannot show a likelihood of ultimate success on its claim under the Clayton Act. *See* 15 U.S.C. § 18 (prohibiting acquisitions whose “effect . . . may be substantially to lessen competition” in “any line of commerce”); *Heinz*, 246 F.3d at 719 n.17 (“Courts interpret ‘line of commerce’ as synonymous with the relevant product market.”); *see FTC v. Whole Foods Market, Inc.*, 548 F.3d 1028, 1036 (2008) (Brown, J.) (“market definition is . . . necessary in a § 7 case” (citing 15 U.S.C. § 18)).¹²

¹² The D.C. Circuit’s *Whole Foods* decision lacked a majority opinion. *See Whole Foods*, 548 F.3d at 1051 n.1, 1061 n.8 (Kavanaugh, J., dissenting). Thus, in referring to one of the two concurring opinions or the dissent, the Court will indicate the name of the Judge whose opinion is cited. *See id.* at 1032 (Brown, J.); *id.* at 1041 (Tatel, J.); *id.* at 1051 (Kavanaugh, J., dissenting).

But just because the relevant product market is not “as broad[] as the Government chooses to define it,” the record may still contain evidence of an alternative relevant product market in which to analyze the merger’s competitive effects. *Brown Shoe*, 370 U.S. at 368 (Harlan, J., dissenting in part, concurring in relevant part). “The duty rests with the District Court . . . to determine what is the appropriate market on an appraisal of the relevant economic considerations.” *Id.* And despite the FTC’s insistence that the relevant product market should not “be defined around individual grades of H₂O₂ or end uses,” Br. at 14, it *has* provided quantitative evidence of alleged anticompetitive harm in a narrower alternative market consisting solely of standard grade hydrogen peroxide in the Southern and Central United States. *See* Rothman Rpt., JX0075-052 & n.159, -094 & n.324, -104 & n.350 (providing market concentration statistics, predicted first order approximation price effects, and merger simulation predicted price effects, assuming that PeroxyChem divests its Prince George facility to a new competitor). The parties also agree that hydrogen peroxide formulated for particular end uses could constitute separate product markets, *see* PPFCL at 3, 5 ¶¶ 11, 15; DFFCL at 21–22 ¶¶ 62–63, though the FTC has not provided any specific data related to end uses with which to evaluate the merger. The Court thus proceeds to consider the evidence in the record as to whether either (1) standard grade hydrogen peroxide or (2) hydrogen peroxide formulated for specific end uses is a relevant product market for purposes of assessing the merger’s competitive effects.¹³

¹³ The record lacks evidence of market concentration statistics or other quantitative measures of anticompetitive effects for alternative specialty grade or pre-electronics grade hydrogen peroxide product markets.

(A) Standard Grade Hydrogen Peroxide

Standard grade hydrogen peroxide serves various end uses, including the bleaching of pulp, paper, and textiles; it is also used in wastewater treatment and in the mining and oil and gas industries. Dumas Hrg. Tr. 235:1–3; Suter Hrg. Tr. 408:8–14; Costanzo Hrg. Tr. 1223:6–13; Montag Hrg. Tr. 1566:5–1567:2, 1600:23–1601:3. It is often referred to as a “commodity”—a product that can be used interchangeably among suppliers with ease, where they compete mainly on price. *See* PPFCL at 34 ¶ 120; DPFCL at 8 ¶ 15; JX0120-001; Anderson Hrg. Tr. 193:1–18. However, this does not necessarily mean that all standard grade hydrogen peroxide, regardless of end use, constitutes a relevant product market. *See Arch Coal*, 329 F. Supp. 2d at 120 (describing “the ‘narrowest market’ principle”). For that, there must be sufficient demand-side substitution among standard grade products, or—as discussed above—supply-side substitution may suffice in the exceptional case if the Merger Guidelines’ swinging requirements are met.

On the demand side, “[d]etermination 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.” *E. I. du Pont.*, 351 U.S. at 393; *see Staples I*, 970 F. Supp. at 1074. The FTC has not argued that there is demand-side substitutability across formulations of standard grade hydrogen peroxide.¹⁴ And perhaps for that

¹⁴ While the FTC has consistently pleaded and argued for a product market consisting of non-electronics grade hydrogen peroxide, Defendants contend that the FTC’s swinging theory only arose after it moved for a preliminary injunction:

This supply side approach didn’t arise until Dr. Rothman’s report after the fact discovery was closed. There is no mention in the complaint of supply side factors informing product market definition, none. There’s no mention of the word “swing” or “shift” anywhere in the FTC’s complaint. They ask no discovery of any of the five suppliers leading up to -- in the discovery leading up to the hearing, anything about their ability to shift or swing.

Mahr Hrg. Tr. 2321:8–15.

reason, there is no evidence in the record that buyers are likely “to substitute one commodity for another” in response to a SSNIP for a particular end use. *Staples I*, 970 F. Supp. at 1074. For example, if a customer for standard grade hydrogen peroxide used in in fracking—removing oil and gas from subterranean rocks and fissures—experienced a SSNIP, the record does not show that she is likely to instead purchase standard grade hydrogen peroxide intended for bleaching pulp and paper. While all standard grade hydrogen peroxide has a similar purity and chemical composition, its “character or use” appears sufficiently different across end uses. *Id.* To the extent the record contains evidence on this point at all, it suggests that customers primarily view standard grade hydrogen peroxide produced by different suppliers as interchangeable within—but *not* between—end uses. *See, e.g.*, Maeder Hrg. Tr. 170:16–172:5 (pulp and paper end use); Engram Hrg. Tr. 317:2–11, 361:21–362:24 (wastewater treatment end use); PPFCL at 13 ¶ 42 (oil and gas end use); PPFCL at 4 ¶ 12 (“The precise combination of purity level, concentration, and stabilization package varies depending on the [end use] of H₂O₂, but within each [end use], H₂O₂ sold by each producer is very similar.”). Therefore, the different end-use products are not demand substitutes, and they cannot be aggregated into a single standard grade product market on that basis.¹⁵

The Court thus turns to the swinging exception to the usual demand-side rule. Merger Guidelines § 5.1; *see Heinz*, 246 F.3d at 718 (“The definition of product market focuses solely

¹⁵ The *Brown Shoe* practical indicia also weigh against a standard grade market. The hydrogen peroxide industry recognizes “well-defined submarkets” by end use; end uses within standard grade, by their definition, have “peculiar characteristics and uses”; their customers tend to be different (save for distributors who re-sell hydrogen peroxide into various industries); and prices are distinct. *Brown Shoe*, 370 U.S. at 325; *see, e.g.*, PPFCL at 4 ¶ 12; Dumas Hrg. Tr. 235:1–3; PX2047-031 (standard grade hydrogen peroxide for mining sells at nearly 15 percent higher price than for pulp and paper bleaching); JX0083-065 to -118 (Evonik’s competitor details database).

on demand substitution factors.” (cleaned up)). Under the Merger Guidelines, swinging within standard grade hydrogen peroxide formulations must be nearly universal, easy, and profitable before those products may be aggregated into one market. *See* § 5.1 & n.8.

The record is not totally clear on the ease and near universality of swinging between the various formulations of standard grade hydrogen peroxide. This is likely so because the FTC never proposed such a product market; it only argued these points to support swinging between standard, specialty, and pre-electronics grades. But the evidence suggests that as a practical matter, such swinging is possible and happens to some extent. *See* PPFCL at 4 ¶ 12; PX1201-012. Many of the obstacles to swinging between *grades*, explained above, do not apply to swinging between the various formulations of standard grade. And most suppliers already make the various formulations required for bleaching pulp, paper, and textiles; for treating wastewater; and for use in the mining and oil and gas industries. *See* JX0083-065 to -118 (Evonik’s competitor details database).

The problem is the lack of record evidence on profitability. The Court cannot find that standard grade hydrogen peroxide is a relevant product market because the record lacks evidence that swinging between standard grade formulations is likely to be profitable. In fact, the limited evidence in the record suggests substantial differences in profitability across standard grade formulations. Dr. Rothman found that “for every 100 units of pre-electronics grade hydrogen peroxide that Evonik sells, it sells ■ units of standard grade hydrogen peroxide at a per unit margin that is higher than its average per unit margin on pre-electronics grade,” Rothman Rebuttal Rpt., PX7102-017; *see also* Rothman Hrg. Tr. 791:24–792:19. The average profit margin for Evonik’s standard grade hydrogen peroxide is about ■ cents, and the profit margin for its pre-electronics grade hydrogen peroxide is ■ cents. JX0066-043 fig. 10. That means a

subset of standard grade hydrogen peroxide sells at a profit margin ■ percent higher than the average for standard grade. And of course, that means that *some* standard grade hydrogen peroxide sells for *even more* than the ■ percent higher profit margin than other standard grade formulations, like that for pulp and paper bleaching, which has some of the lowest margins. *See, e.g., Anderson Hrg. Tr. 199:23–25; Lerner Hrg. Tr. 1379:13–24, 1381:6–18.* Admittedly, the evidence in the record on this point is minimal.¹⁶ But it is the FTC’s burden to define the market and, if relying on supply-side substitutability, show that swinging is likely profitable. The evidence does not suggest that in response to a SSNIP of five percent in lower-profit standard grade hydrogen peroxide, suppliers likely would swing from higher-profit standard grade to constrain the price for the lower-profit formulation.

And as described above, this shortcoming reflects a more fundamental issue with the FTC’s overall product market definition. To some degree, suppliers’ decisions to make different hydrogen peroxide products does not appear to represent swinging at all, because in general, it is only profitable to shift production in *one direction* to more specialized products that “are more stable in economic downturns” relative to pulp and paper products. *Rettig Hrg. Tr. 1047:14–15; see, e.g., JX0151-016 to -017; ■* Once that happens, there is no evidence that, in general, suppliers shift *back*, or that it would be profitable to do so in response to a SSNIP. In other words, this is not an industry of suppliers prepared to swing and constrain prices across lower-profit formulations, even within an alternative market for standard grade hydrogen peroxide.

¹⁶ The record does include some evidence on pricing for standard grade, *see, e.g., PX2047-031; Hill Rpt. JX0066-098 fig. 45*, but the Court is unable to glean from that data the profit margins for each product, which is the relevant metric to assess whether suppliers are likely to swing. *Cf. Rebel Oil*, 51 F.3d at 1436 (“it is immaterial that . . . a price differential exists” between supply-substitutable products).

(B) End Uses of Hydrogen Peroxide

At this point, then, the FTC has not proven its proposed relevant product market for all non-electronics grade hydrogen peroxide. Neither has it shown, in the alternative, a relevant market for standard grade. Moving one last step narrower, the evidence in the record *does* support a relevant product market for hydrogen peroxide based on traditional demand substitutability: hydrogen peroxide products formulated for different end uses, regardless of grade.¹⁷

The record is reasonably clear that “within any given end-use for H₂O₂, the product offerings of the five H₂O₂ suppliers are largely undifferentiated.” PPFCL at 33 ¶ 118. And in contrast, across end uses, customers do not find the products substitutable. For example, most suppliers make a specialty grade product used to preserve food packaged for sale known as aseptic packaging hydrogen peroxide. Customers for that product do not view standard grade hydrogen peroxide intended for pulp and paper bleaching as interchangeable with it. Similarly, there is no reason to suspect that, in response to a price increase, they would switch from hydrogen peroxide for aseptic packaging to that intended for bleaching. *See* Engram Hrg. Tr. 364:7–13; Suter Hrg. Tr. 429:2–25; Montag Hrg. Tr. 1516:20–1518:6; Rhilinger Hrg. Tr. 2272:11–13 (“Nobody here is arguing that you should bleach your hair or whiten your teeth or clean your cuts with [hydrogen peroxide for] rocket fuel.”). Each of these product markets for particular end uses are the “smallest relevant market[s] satisfying the hypothetical monopolist test.” Merger Guidelines § 4.1.1; *see* PPFCL at 3, 5 ¶¶ 11, 15; DFFCL at 21–22 ¶¶ 62–63. Accordingly, hydrogen peroxide products formulated for the same end use satisfy a demand-side

¹⁷ [REDACTED]

substitution approach to defining a relevant product market; analysis of the supply side is unnecessary. *See Heinz*, 246 F.3d at 718.

b. The FTC's Proposed Geographic Markets

To establish a prima facie case by showing that the merger would cause a highly concentrated market, besides defining a relevant product market, the FTC must also demonstrate a relevant geographic market. *Baker Hughes*, 908 F.2d at 982. The FTC proposes two relevant geographic markets: (1) the Pacific Northwest, which includes Idaho, Oregon, Montana, Washington, and Wyoming in the United States and Alberta, British Columbia, Manitoba, and Saskatchewan in Canada; and (2) the Southern and Central United States, which includes Alabama, Arkansas, Arizona, California, Colorado, the District of Columbia, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Missouri, Mississippi, North Carolina, North Dakota, Nebraska, New Mexico, Nevada, Ohio, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Wisconsin, and West Virginia. PPFCL at 22–23, 25 ¶¶ 72, 78.

As discussed below, any anticompetitive effects of the merger in the proposed Pacific Northwest geographic market are resolved by PeroxyChem's proposed divestiture of its Prince George plant. And the FTC's failure to show that non-electronics hydrogen peroxide is a relevant product market makes the proposed Southern and Central United States geographic market useless to the FTC in meeting its burden.

i. The Pacific Northwest and the Prince George Divestiture

Within days of the FTC moving for a preliminary injunction, Evonik and PeroxyChem agreed on a divestiture that threw a wrench in the FTC's argument that their merger will substantially lessen competition in its proposed Pacific Northwest geographic market.

Defendants agreed that if their merger closes, Evonik will not acquire PeroxyChem’s only plant in that market, in Prince George, British Columbia. Instead, a new competitor, international chemical manufacturer UI, will purchase the plant for [REDACTED]. Share Purchase Agreement, JX0147-017. Without analyzing the agreement with UI specifically, the FTC’s expert, Dr. Rothman, concluded that if PeroxyChem sells its Prince George plant to a new competitor that replaces PeroxyChem’s competitive intensity in the Pacific Northwest, competition will not be substantially lessened in that geographic market. Rothman Rpt., JX0075-052 n.156, -104 nn.351–52; Rothman Hrg. Tr. 830:20–831:11.¹⁸ The Court therefore turns to that threshold question first.

Defendants have the burden to show that a proposed divestiture will replace the merging firm’s competitive intensity. *Aetna Inc.*, 240 F. Supp. 3d at 60. To evaluate whether a divestiture will do so, courts consider the likelihood of the divestiture; the experience of the divestiture buyer; the scope of the divestiture, the independence of the divestiture buyer from the merging seller, and the purchase price. *Id.* at 60–74; *FTC v. Sysco Corp.*, 113 F. Supp. 3d 1, 72–78 (D.D.C. 2015). The Court holds that Defendants have met their burden of showing that UI will replace PeroxyChem’s competitive intensity.

(A) Likelihood of the Divestiture’s Closing

For starters, the Prince George divestiture to UI is highly likely to occur. The parties to the divestiture, Evonik, PeroxyChem, and UI, have agreed to use all commercially reasonable efforts to ensure the closing conditions are satisfied; UI is capable of closing financially; it is excited to get “a really good business at a really good price”; and just days ago, the Canadian

¹⁸ Dr. Rothman did not analyze what impact a divestiture to a new competitor would have on the likelihood of anticompetitive coordinated effects in the Pacific Northwest. Even so, there is no basis in the record to conclude that UI would be any more likely than PeroxyChem to coordinate with suppliers in the Pacific Northwest to substantially harm consumers.

Competition Bureau entered into a Consent Agreement with Evonik approving both its merger with PeroxyChem and the divestiture of the Prince George plant to UI. The Canadian authorities found that the divestiture eliminated what would otherwise have been a likely “substantial lessening of competition” in western Canada. Consent Agreement (Jan. 13, 2020), ECF No. 141-1 at 1–2, 10, 12–13;¹⁹ *see* Cummins Hrg. Tr. 1743:21–25, 1744:8–1746:7, 1770:11–17; DX0142-006; DX0143-002; Share Purchase Agreement, JX0147-035, -038 to -041, -066. The record lacks any significant obstacles to closing.

(B) UI’s Experience

The record shows that UI has the experience necessary to compete effectively in the hydrogen peroxide industry. UI is an international supplier of organic peroxides and persulfates that operates plants around the world, including a hydrogen peroxide plant in Turkey that it bought in August 2019. PPFCL at 65 ¶ 220; DPFCL at 48 ¶ 127. Although it does not sell hydrogen peroxide in North America, UI has long been a customer for hydrogen peroxide, using it as a raw material in many of its products and serving many of the same customers that it would

¹⁹ Under Fed. R. Civ. P. 201(b)(2) and (c)(2), the Court takes judicial notice of the following adjudicative fact apparent from the Consent Agreement signed January 13, 2020, by the Commissioner of Competition and Evonik: The Commissioner of Competition of the Canadian Competition Bureau has reached a Consent Agreement with Evonik to approve its merger with PeroxyChem and the divestiture of the Prince George plant to United Initiators. *See* Consent Agreement, ECF No. 141-1 at 1–2, 10, 12–13, 27; Defendants’ Request for Judicial Notice, ECF No. 141. The Commissioner found that UI satisfied these requirements:

[REDACTED]

[REDACTED] Consent Agreement, ECF No. 141-1 at 10, 12–13. The Court takes judicial notice solely for the purpose of evaluating the likelihood of the divestiture’s closing; after Canadian regulatory approval, the divestiture is now more likely to do so.

serve as a hydrogen peroxide supplier. DPFCL at 48 ¶ 128. At its three North American chemical plants, UI grapples with challenges much like those that hydrogen peroxide suppliers face, such as security of supply, inventory, tracking, forecasting, and distribution. *Id.* ¶ 129; Cummins Hrg. Tr. 1722:4–10. Jonathan Cummins—UI’s Vice President of Manufacturing for the Americas, who will oversee the Prince George plant if the divestiture closes—managed a hydrogen peroxide plant for Nouryon’s predecessor for seven years. DPFCL at 49–50 ¶¶ 131, 135; Cummins Hrg. Tr. 1722:11–21. That wealth of experience is an important component in helping UI replace PeroxyChem’s competitive intensity in the Pacific Northwest.

(C) The Divestiture’s Scope

The scope of the proposed divestiture is more than sufficient for UI to replace PeroxyChem in effectively running the Prince George plant. The employees running the Prince George plant’s day-to-day operations will continue to do so on UI’s behalf. DPFCL at 50 ¶ 135. UI will receive all tangible and intangible assets that it needs to compete—“key production, sales, market, and distribution assets, sales and marketing personnel, and intellectual property”—and PeroxyChem’s customers for the Prince George plant will become UI’s customers ██████████. *Id.* ¶ 134.

The FTC challenges the divestiture’s scope on several grounds. It argues that UI is buying a “standalone plant” and not a “standalone business” in Prince George. *See* DPFCL at 50 ¶ 133; Rhilinger Hrg. Tr. 2427:14–22; Mahr Hrg. Tr. 2430:15–2431:3. It is true that Defendants technically only propose a divestiture of the Prince George plant, but the evidence shows that the plant “comes along with . . . everything else that’s needed to run a stand-alone business.” Mahr Hrg. Tr. 2431:1–3. UI will have the “personnel, customer lists, information systems, [and] intangible assets,” that will help to “effectively preserve the competition that would have been lost through the merger.” *Aetna*, 240 F. Supp. 3d at 60 (internal citation

omitted).²⁰ In that sense, UI is buying something more like an ongoing business than a plant. And in a recent study of merger remedies, the FTC found that “all of the divestitures involving an ongoing business succeeded” in “clearing a high bar—maintaining competition in the relevant market.”²¹

The FTC also points out that PeroxyChem recently lost its biggest customer served by the Prince George plant, Suncor. PPFCL at 67 ¶ 229. But the Suncor issue speaks more to competition already lost by PeroxyChem, rather than to whether UI will “replace the competitive intensity lost as a result of the merger.” *Sysco*, 113 F. Supp. 3d at 74. Even setting that point aside, PeroxyChem showed at the evidentiary hearing that it has already exceeded internal 2020 bidding projections for the Prince George plant by replacing more than half of the lost Suncor business. Lerner Hrg. Tr. 1394:21–1395:15; Cummins Hrg. Tr. 1760:22–1761:13. Since the hearing, PeroxyChem has had every incentive to continue these efforts, with the serious risk that this Court or the Canadian Competition Bureau would block the merger and the need for the divestiture to UI. Lerner Hrg. Tr. 1395:5–15. And if there were any remaining doubt about the Prince George plant’s sustainability, the divestiture agreement [REDACTED]

²⁰ [REDACTED] See PPFCL at 67–68 ¶ 230. Still, even without UI receiving all of Prince George’s “management infrastructure” from PeroxyChem’s Philadelphia headquarters, *Aetna*, 240 F. Supp. 3d at 60; see Lerner Hrg. Tr. 1360:11–12, UI is likely to replace PeroxyChem’s competitive intensity in the Pacific Northwest. See Montag Hrg. Tr. 1553:4–7; Kramer Hrg. Tr. 1627:11–17.

²¹ See FTC, *The FTC’s Merger Remedies 2006–2012: A Report of the Bureaus of Competition and Economics*, at 1 (Jan. 2017), <https://www.ftc.gov/reports/ftcs-merger-remedies-2006-2012-report-bureaus-competition-economics> (cleaned up).

at 69 ¶¶ 233–35. The FTC argues that these provisions are red flags raising “serious and substantial questions as to Prince George’s viability,” PPFFCL at 67 (cleaned up), but in fact, these provisions show that UI is set up to compete into the future.²²

(D) UI’s Independence

Next, there is no reason to question whether UI will be an independent competitor in the Pacific Northwest. The FTC challenges UI’s independence because it has ongoing commercial relationships with Evonik and PeroxyChem as a customer for hydrogen peroxide, and UI leases the land for its Mobile, Alabama, plant from Evonik.²³ PPFFCL at 70–71 ¶¶ 241–42. But Cummins credibly dispelled this notion of undue influence. Cummins Hrg. Tr. 1742:5–1743:7. The FTC also points out that when UI made its first offer to purchase the Prince George plant, it

█
█ PX1515-003. But that is just the nature of selling a business, which is never completely seamless. UI may not—in fact, it *will* not—secure every customer it pursues when it takes over the Prince George plant. But the record does not cast doubt on UI’s ability to compete independently, given the protections in the divestiture agreement, UI’s experience, and the scope of the divestiture. In fact, Prince George is likely to be operating at █ capacity in 2020. See Cummins Hrg. Tr. 1753:5–21.

²² See also Decision and Order, *In re Linde AG*, FTC Docket No. C-4660 at 15 (Feb. 26, 2019), https://www.ftc.gov/system/files/documents/cases/c4660_decision_and_ordermodified_593725_public_redacted.pdf (showing similar non-solicitation provision in FTC consent decree to protect divestiture buyer).

²³ The FTC notes that Evonik can evict UI on short notice from this plant, PPFFCL at 70–71 ¶ 242, implying that Evonik could do so to strongarm UI into coordinating on price or declining to compete for certain customers. But there is no evidence in the record to suggest that the Evonik-UI lease is not beneficial to both parties, and Evonik has denied all such intentions. See Cummins Hrg. Tr. 1742:14–20.

(E) Purchase Price

Finally, the proposed purchase price does not cast doubt on the viability of the Prince George plant if it is sold to UI. The FTC argues that the [REDACTED] purchase price is cause for concern because it is far lower than other third-party valuations of the plant. PPFCL at 71 ¶¶ 243–45. But there are a few explanations for the low price, none of which impact Defendants’ showing that they will compete effectively in the Pacific Northwest.

First, to state the obvious, a potential buyer of an asset sold to facilitate a merger under scrutiny by two countries’ antitrust authorities has enormous leverage over the seller because it knows the seller must divest the asset quickly to proceed with the merger. PPFCL at 52 ¶ 139. This short timeframe puts UI’s rushed and minimal due diligence into perspective as well, *see* PPFCL at 66–67 ¶¶ 223–28. Although most companies contemplating such a purchase would conduct more thorough diligence, the limited window for that diligence allowed UI to bargain for a lower price. *See id.*; PX1515-002 to -003 ([REDACTED] [REDACTED]). In short, by bidding the lowest price possible, UI acted like any rational actor in this circumstance. Cummins Hrg. Tr. 1900:16–1901:10.

Second, that UI has no presence in the Pacific Northwest provided Evonik an even stronger incentive to sell the Prince George plant to it, as opposed to a current hydrogen peroxide supplier in the market like [REDACTED] which valued the plant at [REDACTED]. *See* PPFCL at 71–72 ¶ 246. It stands to reason that Evonik’s merger with PeroxyChem would be more likely to survive antitrust scrutiny if it sold the Prince George plant to UI, since doing so would maintain the same number of competitors in the Pacific Northwest.

The FTC suggests that the [REDACTED] purchase price would allow UI to sell off the Prince George plant for parts or drive it into the ground and still turn a profit. *See* PPFCL at 71

¶¶ 243–45. To the contrary, the evidence shows that UI is a good-faith purchaser that intends to compete effectively in the hydrogen peroxide market and grow the business, and it has strong incentives to do so.²⁴ *See, e.g.*, Cummins Hrg. Tr. 1742:17–1743:7, 1771:16–1773:17. UI’s purchase of another hydrogen peroxide plant in Turkey just last year, which it has maintained over the last six months, speaks to this good faith. DPFCL at 48 ¶ 127. The FTC also makes much out of UI’s lack of specific plans for the Prince George plant, as if UI may decide to ignore the plant’s existing operating procedures and fire its employees. *See* PPFCL at 69 ¶ 236. That seems highly doubtful. *See* DPFCL at 50–51 ¶ 135. UI is buying a plant from PeroxyChem with all of the key assets and day-to-day operations in place; there was no obvious reason at the time of the evidentiary hearing for it to have developed its own specific plan.

Ultimately, “antitrust deals in ‘probabilities, not certainties.’” *Aetna*, 240 F. Supp. 3d at 60 (quoting *Brown Shoe*, 370 U.S. at 323). And Defendants’ burden is only to show that the divestiture will likely replace PeroxyChem’s competitive significance in the Pacific Northwest. Defendants have far exceeded that threshold. For these reasons, just as the Canadian Competition Bureau found when approving the UI divestiture with respect to western Canada, *see* Consent Agreement, ECF No. 141-1 at 10, 12–13,²⁵ the Court finds that the merger is not likely to “substantially . . . lessen competition” in the FTC’s proposed Pacific Northwest market.

²⁴ UI’s good-faith desire to compete in the hydrogen peroxide industry is one of many features that distinguish it from the failed divestiture in *Aetna*, 240 F. Supp. 3d at 72. *See id.* at 62, 72–73 (proposed divestiture buyer “repeatedly tried to enter” the market in the past and failed); *id.* at 63, 65 (buyer would not acquire anything resembling a standalone business); *id.* at 65 (buyer showed substantial doubts about its own ability to succeed); *id.* at 72 (purchase price 1/10th of fair market value).

²⁵ *But see* ECF No. 142 at 3 n.2 (comparing standards for merger remedies in the United States and Canada).

15 U.S.C. § 18. As a result, that proposed geographic market cannot assist the FTC in showing its likelihood of success on the merits.

ii. Southern and Central United States

The FTC’s other proposed geographic market is the Southern and Central United States. As already noted, the FTC bears the burden to define a relevant geographic market, *Cardinal Health*, 12 F. Supp. 2d at 49, the region “in which the seller operates, and to which the purchaser can practically turn for supplies.” *Tampa Elec. Co. v. Nashville Coal Co.*, 365 U.S. 320, 327 (1961); *see also Cardinal Health*, 12 F. Supp. 2d at 49 (relevant geographic market is the area “to which consumers can practically turn for alternative sources of the product and in which the antitrust defendants face competition” (citation omitted)). As this definition suggests, a geographic market is dependent on a properly defined product market—no court can assess “the area of effective competition” for a product without defining the product itself. *E. I. du Pont de Nemours*, 353 U.S. at 593 (quoting *Standard Oil*, 337 U.S. at 299 n.5); *Tampa Elec.*, 365 U.S. at 328; *see Merger Guidelines* § 4.2 (“The [Government] applies the principles of [geographic] market definition described here . . . to define a relevant market with a geographic dimension *as well as a product dimension*.”); *Merger Guidelines* § 4.2.1 (“The hypothetical monopolist test requires that a hypothetical profit-maximizing firm that was the only present or future producer *of the relevant product(s)* located in the region would impose at least a SSNIP from at least one location”) (emphases added).

Here, the Court has already explained that at least on the current record, the only relevant product markets are hydrogen peroxide products formulated for specific end uses. But the FTC argues that its proposed Southern and Central United States geographic market is the area of competition for *all* non-electronics hydrogen peroxide because, in its view, customers for that broader product market can choose from all five “freight-logical” hydrogen peroxide suppliers.

See PPFCL at 21 ¶ 68; *id.* at 23 ¶ 74; *id.* at 26–27 ¶¶ 83–84, 87, 90, 93; *id.* at 28 ¶¶ 95, 99.

Accordingly, then, the FTC relied on evidence that suppliers of all manner of hydrogen peroxide products bid and compete for customers across the purported “Southern and Central United States.” See, e.g., PPFCL at 23–25 ¶¶ 74–77. Dr. Rothman also conducted the hypothetical monopolist test for “H₂O₂ sold to customers that are located in these states.” *Id.* ¶ 73. But none of that evidence or analysis is tailored to a relevant geographic market for *each* relevant product market—specific end uses of hydrogen peroxide. Because that evidence does not correspond to the relevant product markets, it is of little use to the FTC in meeting its burden of showing an undue concentration in a market for a particular product in a particular geographic area.

The FTC need look no further than its own challenge to the proposed merger in *Sysco* to see what is missing here. In *Sysco*, the FTC defined relevant product markets based on customer type: “broadline foodservice distribution” to local customers and “broadline foodservice distribution to national customers.” 113 F. Supp. 3d at 48–49. For the national product, as the name indicates, the FTC defined one relevant national geographic market. *Id.* at 49. But for the local product, the FTC defined 32 relevant local geographic markets where the merging firms have dominant market shares. *Id.* at 49, 52. Here, the FTC could have pleaded and argued a Southern and Central United States geographic market for its proposed non-electronics product market and also argued for alternative geographic markets corresponding to each end-use product market. But it did not. So the Court is left with product markets disconnected from any proposed geographic markets in which to analyze competition for those products.

To be sure, a geographical market need not be defined by precise metes and bounds. *Gen. Dynamics*, 415 U.S. at 521. But the record contains substantial evidence suggesting that the Southern and Central United States would not be the relevant area of effective competition

2. Market Concentration

Because the FTC has failed to show a relevant product market with a corresponding relevant geographic market in which competition occurs, a discussion of the next step of its prima facie case—showing undue concentration in that market—is anticlimactic. The FTC has not met its burden under *Baker Hughes* to show undue concentration “in the market for a particular product in a particular geographic area.” 908 F.2d at 982.

“Market concentration, or the lack thereof, is often measured by the Herfindahl–Hirschman Index (HHI).”²⁶ *Heinz*, 246 F.3d at 716. The FTC has not provided HHIs or other measurements for Evonik and PeroxyChem’s combined market share in any alternative market for a particular end use—the only relevant product markets with which to examine the merger’s competitive effects. That failure is dispositive. The Court is unaware of a single case in which a

²⁶ The HHI is calculated by squaring the market share of each firm in the market and adding up these squares (so, if there are three firms with market shares of 50%, 30%, and 20%, the HHI would be $50^2 + 30^2 + 20^2 = 3,800$). Squaring the individual market shares allocates proportionately greater weight to firms with larger shares, reflecting the larger threat to competitive behavior they pose. See Merger Guidelines § 5.3. For antitrust purposes, the FTC and the U.S. Department of Justice generally classify markets as “unconcentrated,” “moderately concentrated,” and “highly concentrated.” An unconcentrated market features an HHI of below 1,500. A moderately concentrated market has an HHI of between 1,500 and 2,500, while a highly concentrated market has an HHI that is greater than 2,500. *Id.*

Economists calculate the HHI score of an industry before and after the proposed merger. Transactions that result in an HHI increase of fewer than 100 points “are unlikely to have adverse competitive effects.” *Id.* In moderately concentrated markets, a transaction that increases the HHI by more than 100 points “potentially raise[s] significant competitive concerns and often warrant[s] scrutiny.” *Id.* Mergers “resulting in highly concentrated markets that involve an increase in the HHI of more than 200 points will be presumed to be likely to enhance market power.” *Id.* This presumption of anticompetitive effects “may be rebutted by persuasive evidence showing that the merger is unlikely to enhance market power.” *Id.*

FTC v. Tronox Ltd., 332 F. Supp. 3d 187, 207 (D.D.C. 2018)

court has enjoined a merger, even at this preliminary stage, where the Government failed to show undue concentration in a relevant market as its prima facie case requires, almost always through an HHI or similar metric. *Baker Hughes* explicitly places that burden squarely on the FTC. 908 F.2d at 982; see *United States v. Anthem, Inc.*, 855 F.3d 345, 349, 353 (D.C. Cir. 2017) (government has the “burden to demonstrate a highly concentrated post-merger market”); *Heinz*, 246 F.3d at 715; *United States v. H & R Block, Inc.*, 833 F. Supp. 2d 36, 84 n.35 (D.D.C. 2011) (“The Court is not aware of any modern Section 7 case in which the court dispensed with the requirement to define a relevant product market.”). And a party’s failure to make out a prima facie case is generally considered a “fundamental defect” that dooms its case. See *Rose v. Mitchell*, 443 U.S. 545, 574 (1979) (“declin[ing] to overlook” party’s failure to “make out a prima facie case of discrimination” even where the opposing party conceded otherwise); *Williams v. Boorstin*, 663 F.2d 109, 118 (D.C. Cir. 1980) (“holding . . . no prima facie case” and reversing judgment finding a Title VII violation); *Baker Hughes*, 908 F.2d at 991 (“production-burden-shifting” framework for “discrimination suits under [T]itle VII” “similar” to *Baker Hughes* framework for Section 7).

The FTC argues that no matter how the product markets are sliced, “the merger would be presumptively illegal in most, if not all, of such narrower markets.” Br. at 14. High concentrations in the Southern and Central United States in the overall standard and non-electronics grade markets suggest that it is possible the FTC could avail itself of that presumption in some more narrowly defined market for a specific end-use product. See Rothman Rpt., JX0075-052 to -053 & n.159; Rothman Rebuttal Rpt., PX7102-010. But those concentrations do not necessarily mean that is likely, given the issues discussed above with delineating relevant geographic markets that correspond to end-use product markets. At bottom,

the Court cannot rely on guesswork to get the FTC over the hump. “[A]ntitrust theory and speculation cannot trump facts, and even Section 13(b) cases must be resolved on the basis of the record evidence relating to the market and its probable future.” *Arch Coal*, 329 F. Supp. 2d at 116–17.

There are also practical reasons why the Court should not deem the FTC to have made out its prima facie case on this record, without an HHI calculated for a relevant product and geographic market that the Court has found viable. The rest of the Court’s analysis on the merits runs the risk of devolving into speculation. For example, the “more compelling the prima facie case, the more evidence the defendant must present to rebut it successfully.” *See Baker Hughes*, 908 F.2d at 991; *Arch Coal*, 329 F. Supp. 2d at 129 (“Certainly less of a showing is required from defendants to rebut a less-than-compelling prima facie case.”). But if the Court has no direct measure of the *strength* of the FTC’s prima facie case connected to the relevant market, it cannot weigh whether the evidence offered by Defendants is enough to rebut that case. More generally, evaluating the persuasiveness of the additional evidence offered by Defendants in rebuttal, and by the FTC in support of its ultimate likelihood of success on the merits, becomes all but impossible. Some of that evidence might be relevant (and to some degree) to competition in that narrower relevant market, and some might not. The Court has little way of sorting all that out, when the parties have not tailored their presentations to the relevant market. And, it bears mentioning, even the “mere possibility” of a substantial lessening of competition is not enough to show a violation of the Clayton Act. *Heinz*, 246 F.3d at 713 (citation omitted); *see also Staples I*, 970 F. Supp. at 1072 (“It is not enough for the FTC to show merely that it has a ‘fair and tenable chance’ of ultimate success on the merits.”).

All of this is not to say that in a subsequent administrative proceeding, the FTC could not calculate HHIs connected to end-use-specific product markets and relevant geographic markets to make out its prima facie case. But the Court cannot say on this record—devoid of particularized data for those relevant markets—that there is a “reasonable probability” that Evonik and PeroxyChem’s merger would produce an undue concentration in a relevant market.²⁷ *Heinz*, 246 F.3d at 713 (citation omitted). Accordingly, the FTC has not met its burden of demonstrating a prima facie case.

B. Defendants’ Rebuttal Evidence and the FTC’s Additional Evidence of Anticompetitive Harm

Nonetheless, to provide as complete a review of the record as possible in this unusual circumstance, the Court will not stop there. The Supreme Court has stressed that courts must judge “the probable anticompetitive effects of the merger” “functionally” and based on “a further examination of the particular market—its structure, history and probable future.” *Gen. Dynamics*, 415 U.S. at 498 (quoting *Brown Shoe*, 370 U.S. at 321–22 & n.38) (cleaned up). Of course, in *General Dynamics*, the Court only conducted a further examination “of the particular market” after the Government met its prima facie burden, *id.* at 497–98, and the Court has concluded that the FTC has failed to meet that burden. But even assuming that the FTC had made out a prima facie case on this record, the Court could not conclude that it has shown a

²⁷ One judge has gone so far as to suggest that a plaintiff “may” prove a Section 7 violation even without meeting its prima facie burden under *Baker Hughes* to “defin[e] a market and show[] undue concentration in that market.” *Whole Foods*, 548 F.3d at 1036 (Brown, J.) (citing *Baker Hughes*, 908 F.2d at 982–83; *United States v. El Paso Natural Gas Co.*, 376 U.S. 651, 660 (1964)). Even if the FTC here could meet its prima facie burden without showing undue concentration in a relevant market—instead relying on other evidence of anticompetitive harm such as predicted price effects, *e.g.*, Rothman Rpt., JX0075-094 & n.324, -097 to -099 & nn.334, 339, 344; *id.* -104 to -106 & nn.350, 354, 356, 358—that record evidence would not make out a prima facie case for the reasons already described. The FTC’s threshold failure to define a relevant market hamstringing its ability to show (and the Court’s ability to evaluate) a likely and substantial lessening of competition.

likelihood of success based on Defendants' rebuttal evidence and the FTC's additional evidence of anticompetitive harm.

In undertaking an evaluation of that evidence, the Court's review is necessarily limited. As explained above, much of this additional evidence—especially the dueling quantitative models developed by Dr. Rothman and Dr. Hill—is grounded in the FTC's proposed product and geographic markets, which the Court has rejected. The Court cannot know much about what, if anything, that evidence might mean for the effects of the proposed merger on different product and geographic markets.²⁸ The Court notes only that Dr. Hill, who has testified on behalf of the FTC and against proposed mergers on several occasions, asserted based on his models that even in the market as conceived by the FTC, the merger would not result in a substantial reduction of competition. Dr. Rothman took the opposite view.

That said, other evidence applies to how the industry operates as a whole and is therefore less dependent on the FTC's proposed product and geographic market definitions. The Court does its best to assess that evidence below. And after doing so, it concludes that the current hydrogen peroxide industry is not particularly vulnerable to coordination, what vulnerability exists is not likely to increase as a result of the merger, and the evidence does not show a likelihood that the merger will cause substantial unilateral anticompetitive effects.

There is no science to weighing the factors at play in an antitrust analysis. Only an examination of the real-world evidence—including ordinary course documents, bidding data, and

²⁸ The FTC introduced data on predicted first order approximation effects and merger simulation predicted price effects for an alternative standard grade hydrogen peroxide product market in the Southern and Central United States and in alternative geographic markets in the Southern, Central, and Western United States—none of which the FTC has shown are relevant markets. See Rothman Rpt., JX0075-094 & n.324, -097 to -099 & nn.334, 339, 344; *id.* -104 to -106 & nn.350, 354, 356, 358.

testimony from market participants—can supply an accurate picture of the industry and competitive dynamics.²⁹ That picture in this case reveals that hydrogen peroxide prices are falling, and that competition is being promoted by blind bidding, sophisticated customers, and the customary use of large and long-term contracts. The Court concludes that the proposed merger is not likely to substantially change these market characteristics or substantially increase prices.

1. The Market’s Vulnerability to Coordination

“Merger law rests upon the theory that, where rivals are few, firms will be able to coordinate their behavior, either by overt collusion or implicit understanding, in order to restrict output and achieve profits above competitive levels.” *Heinz*, 246 F.3d at 715 (internal quotations omitted). Coordination is conduct by firms that is profitable for each of them only if the others accommodate it. Merger Guidelines § 7. Tacit coordination, the FTC’s theory in this case, is enforced not by an explicit agreement, but by the “detection and punishment of deviations.” *Id.* Firms’ ability to coordinate “depends on the strength and predictability of rivals’ responses to a price change or other competitive initiative.” *Id.* Tacit coordination itself is not illegal; it is firms making “independent production decisions to maximize profits. But a core purpose of

²⁹ The Court admitted over 1,300 exhibits en masse at the beginning of the two-week evidentiary hearing. *See* Hrg. Tr. 155:20–157:5; Final Exhibit List, ECF No. 135-2; Joint Report on Defendants’ Outstanding Objections, ECF No. 139-1. But the Court did not accord all that evidence equal weight. When a party cited an exhibit in its proposed findings of fact and conclusions of law without laying a foundation for it at the hearing, or where it cited the deposition of a witness who did not testify at the hearing, the Court granted less weight to the evidence (and sometimes no weight). *See, e.g.*, PPFCL at 77 ¶ 263 (citing JX0021). That weight depended on several factors. *See* Minute Order of October 23, 2019 (denying Defendants’ request to exclude certain categories of evidence because the Federal Rules of Evidence do not apply to preliminary injunction hearings, but noting that the Court would accord weight to evidence depending on the manner in which it was presented, whether a foundation for it was laid, and whether the circumstances suggested its relevance and reliability).

antitrust law is to scrutinize mergers that may make it easier for firms to collectively reduce output, and indeed, to prevent mergers that are likely to do so.” *FTC v. Tronox Ltd.*, 332 F. Supp. 3d 187, 208–09 (D.D.C. 2018); *see Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 227 (1993). The Merger Guidelines advise that even where a market “shows signs of vulnerability to coordinated conduct,” before challenging a merger, the FTC must also “have a credible basis on which to conclude that the merger may enhance that vulnerability.” § 7.1.

The FTC is right that some features of the hydrogen peroxide industry typically suggest vulnerability to coordination. There are few suppliers, only five in the FTC’s proposed product and geographic market. And fewer suppliers usually means that suppliers anticipate “stronger and faster” responses from their rivals, which diminishes the reward from attracting a competitor’s customers. Merger Guidelines § 7.2; *see Rothman Hrg. Tr.* 750:20–21 (“maintaining discipline through deterrence is more straightforward when there are fewer firms”). Elasticity of demand in the hydrogen peroxide market is also extremely low, regardless of end use. PPFCL at 32–33 ¶¶ 113–17. In other words, customers are unlikely to substitute away from hydrogen peroxide to a different chemical if suppliers coordinate to increase prices by a significant amount. Accordingly, the incentives for suppliers to coordinate are stronger.

But taken together, the remaining evidence rebuts the notion that the current hydrogen peroxide market is vulnerable to coordination.

First, blind bidding for hydrogen peroxide customers produces substantial cost savings for customers and “frustrate[s] coordination among producers.” *Arch Coal*, 329 F. Supp. 2d at 144; *see DPFCL* at 53–54, 66–67 ¶¶ 143–46, 173. In general, the bidding process in the industry works as follows: a customer publishes an RFP for a given location, specifying the

hydrogen peroxide product, volume, and contract duration sought; suppliers submit confidential bids; and then the customer typically lets one or more of the bidders know how competitive their bid is (without sharing specific prices) so that they will lower their bid price. *See* DPFFCL at 15 ¶¶ 42, 44; *id.* at 66–67 ¶ 173. This pitting of suppliers against each other lowers prices, even when there are only two competing suppliers, because suppliers generally do not know which other suppliers have placed bids. *See id.* at 67 ¶ 175. In this market, without specific knowledge of competing bids, suppliers are incentivized “to submit aggressive bids” because “cheating”—a departure from coordinated higher prices—“would not be detected until well after the fact, if ever, and any punishment would come well after the fact as well.” *Arch Coal*, 329 F. Supp. 2d at 145. Accordingly, the average price of standard grade hydrogen peroxide in the Southern and Central United States, measured across all end uses, has *decreased* each of the last three years for three of the five hydrogen peroxide suppliers, Hill Rpt., JX0066-098 fig. 45, and prices have declined for much of the rest of the industry as well, *id.* -097 fig. 44; *see also id.* -099 fig. 46 (annual customer savings from bidding competition for Southern and Central United States customers).

Second, the use of large and long-term contracts in the hydrogen peroxide industry incentivizes firms to “deviate from the terms of coordination,” *FTC v. CCC Holdings*, 605 F. Supp. 2d 26, 64 (D.D.C. 2009) (internal quotation omitted), “even if they expect strong responses by rivals,” Merger Guidelines § 7.2, because the stakes are so high and there are fewer “opportunities for firms to punish one another.” Hill Hrg. Tr. 2059:14–15; *see Arch Coal*, 329 F. Supp. 2d at 145; DPFFCL at 69–70 ¶¶ 179–81. Customers for hydrogen peroxide are typically

large manufacturers who consume an enormous volume of hydrogen peroxide annually.³⁰ DPFFCL at 69 ¶ 180. Contracts for those customers come up for bidding at most once a year, and usually every other or third year. *Id.* at 69–70 ¶ 181. If a supplier loses out on too many contracts, it cannot just turn to a customer base outside North America or find other ways to increase demand; total volume in the hydrogen peroxide industry has remained relatively constant, so suppliers understand they are competing for a limited base of customers. *See* PPFFCL at 32 ¶ 114. In this small and stagnant pond of customers, competition for the bigger fish is fierce. It is unlikely that suppliers would coordinate and decline to cast their rod for the chance to reel any one of them in. Indeed, the record shows that suppliers typically bid aggressively for those big contracts, as the Court discusses below when evaluating suppliers’ recognition of their interdependence.

Third, even if suppliers did try to coordinate their bidding behavior to increase prices, the hydrogen peroxide industry is marked by sophisticated and powerful customers that are well equipped to defeat coordination. *See* Merger Guidelines § 8; *Wilhelmsen*, 341 F. Supp. 3d at 70; *CCC Holdings*, 605 F. Supp. 2d at 64 (“A sophisticated customer base makes price coordination more difficult.”). Many hydrogen peroxide customers have dedicated procurement personnel who are experienced at conducting RFPs, minimizing costs, and leveraging competing bids to secure the best contract terms. *See* DPFFCL at 70–71 ¶¶ 183–85.

³⁰ The FTC notes that some pulp and paper customers award business on a mill-by-mill basis, so those large-volume buyers do not “inherently impede coordinated conduct.” PPFFCL at 99 ¶ 80; *see id.* at 78 ¶ 268. Although this may mitigate the effect of large and long-term contracts somewhat, each of those mills are still purchasing high volumes of hydrogen peroxide, and competition is progressively stronger for this “shrinking pie” of pulp and paper customers. Rhilinger Hrg. Tr. 2414:18; *see* Hill Hrg. Tr. 2205:20–2206:4; JX0089-003 (almost 19 million pounds of hydrogen peroxide volume for [REDACTED] pulp and paper mill).

Fourth, while previous collusion in an industry can give rise to a presumption that a market is vulnerable to coordination, that presumption does not hold if “competitive conditions in the market have since changed significantly.” Merger Guidelines § 7.2. Here, competitive conditions in the hydrogen peroxide industry *have* changed significantly since some suppliers engaged in price fixing nearly 20 years ago. *See* PPFCL at 42–43 ¶ 143; DPFCL at 72 ¶ 188. The FTC argues that because the industry products, plants, actors, and capacity are roughly the same now, nothing has changed. PPFCL at 43–44 ¶¶ 144–48. But the very features of the industry that enabled suppliers to fix prices—public price announcements, swap agreements, and meet-or-release clauses, *see* DPFCL at 73 ¶¶ 190–92—are largely nonexistent now, and there is no reason to think they are likely to return soon.³¹

³¹ For example, the record reflects only one public price announcement since 2016. *See* PX2055-004; PPFCL at 44 ¶ 149; DPFCL at 73 ¶ 190. The FTC argues that ██████ attempted to raise prices in 2018, an allegation it first leveled after the hearing in its proposed findings of fact, PPFCL at 44 ¶ 149 (citing ██████ JX0054 ██████; PX3028-001), and without questioning the relevant witnesses about it at the evidentiary hearing: ██████

████████████████████ Even so, it appears the attempted price increase was only communicated to customers, not to the public. *See* PX3028-001; Mahr Hrg. Tr. 2421:23–2422:3. In addition, when suppliers fixed prices two decades ago, they frequently reached swap agreements with each other. DPFCL at 73 ¶ 191. A swap agreement occurs “when there’s a customer that’s relatively distant from its supplier, and that supplier makes a deal with a closer supplier to instead serve the customer on its behalf.” Hill Hrg. Tr. 2066:19–22. A swap agreement lessens the incentive to compete for customers in the first place because both parties to the swap benefit from a single customer. *Id.* 2065:22–2067:1. And finally, suppliers used to include meet-or-release clauses in their customer contracts. DPFCL at 73 ¶ 192. That clause allows a customer under contract who is offered a better price elsewhere to tell its current supplier, “[m]atch that price or I’m going to make the contract invalid and switch to the other supplier.” *Id.* 2065:18–22. Meet-or-release clauses also lowered suppliers’ incentive to compete aggressively in the first place, and they served as “an early warning system for detecting deviations” from coordination. *Id.* 2065:23–2066:7.

There is mixed evidence in the record relating to other factors that courts consider to evaluate industry vulnerability to coordination. But on balance, the Court concludes that Defendants have the better argument in each case, or at least that the factor is essentially neutral.

One factor is market transparency, on which coordination depends. A market is more vulnerable to coordination if (1) “the terms offered to customers are relatively transparent,” (2) there is “[p]rice transparency,” or (3) there is “transparency regarding the identities of the firms serving particular customers” (which can give rise to “customer or territorial allocation”). Merger Guidelines § 7.2. Here, the terms offered to customers in blind bids are opaque; aside from knowing the basic terms requested in an RFP, suppliers have little way of knowing what their competitors are offering. *See* DPFCL at 66–67 ¶ 173. Price is also mostly opaque. Suppliers have information about general pricing trends in the industry and each other’s production costs, but systematic attempts by suppliers to track each other’s prices have largely failed. *See* DPFCL at 66–68, 77–78 ¶¶ 173, 176–77, 201; PPFCL at 36–38 ¶¶ 127–130, 132; Corson Hrg. Tr. 658:8–11 (“I know that the pricing information, we, kind of, stopped even trying to maintain that because there was never a consistency, nor is this information available.” (cleaned up)). On the other hand, suppliers gain a general idea of the relationships that develop between certain suppliers and certain customers from the bidding process and their conversations with customers. PPFCL at 36–38 ¶¶ 130–31, 133.

Another factor is product and pricing homogeneity; the more homogenous products and prices are, the more vulnerable the market is to coordination. *CCC Holdings*, 605 F. Supp. 2d at 61. Although hydrogen peroxide products are relatively homogenous—within end uses, but not between them—pricing is heterogeneous and unpredictable for each product, largely due to the substantial role that freight plays into pricing decisions. *See* PPFCL at 33–34 ¶¶ 118–20;

DPPFCL at 65 ¶ 170; Hill Rpt. JX0066-028 fig. 4; *id.* -098 fig. 45 (average standard grade price varies from 23 cents to 37 cents); *id.* -097 n.254 (standard grade hydrogen peroxide “typically has less variation in price within it than do other grades”). These variations in price make it difficult for suppliers to predict how consumers will react to their pricing decisions, which would facilitate coordination.

In addition, plants operating at capacity can sometimes suggest a reduced incentive to compete for customers aggressively, because suppliers can only serve so many of them. *See* PPFCL at 39 ¶ 136; JX0032-086; PX2484-001; *cf.* DPPFCL at 55 ¶ 147 (Solvay undercut suppliers on price in 2017 after they expanded capacity). And the evidence here shows that [REDACTED] hydrogen peroxide suppliers are operating their plants nearly at capacity. Even so, other features of the market—a significant portion of contracts up for bidding every year, large volume contracts, and the need to keep plants running at capacity due to the high fixed costs of running them—should still incentivize competition. *See* DPPFCL at 71 ¶ 184. Indeed, for those reasons, every bidding cycle is crucial for suppliers. *See, e.g., id.* at 70 ¶ 181; Corson Hrg. Tr. 652:14–19 (“[T]he large volumes that come up . . . at the end of the year . . . expose us to a lot of risk as we plan our production; our terminals; our whole logistics network around those customers. So if there is a change, it affects us dramatically.”).

Finally, a market is conducive to tacit coordination “where producers recognize their ‘shared economic interests and their interdependence with respect to price and output decisions.’” *Arch Coal*, 329 F. Supp. 2d at 131 (quoting *Brooke Group*, 509 U.S. at 227)). The FTC’s theory of such coordination presupposes suppliers with an acute awareness of each other’s interdependence, withholding bids to avoid downward “price spirals” or retaliation from competitors. PPFCL at 38–42 ¶¶ 134–41. But the evidence in the record on this point is mixed

at best. In most cases when suppliers expressed concern about retaliation from competitors, those same suppliers proceeded to ignore that risk and undercut their competitors on price anyway, in large part due to the large and long-term contracts at stake. *See, e.g.*, PX1027-008 (Evonik recognizing “Competitive Repercussions” of taking Suncor business from PeroxyChem); PPFCL at 67 ¶ 229 (Evonik successfully bid on Suncor anyway); JX0112 (supplier “bit off a little more than they expected . . . in retaliation for [Evonik] picking up . . . additional business”); PX2339-001 (“It’s really critical that we push for whatever extra share we can get at ██████”); PX1307; PX1440.

Moreover, in the few instances when suppliers appeared to withhold bids after acknowledging the potential for retaliation, those decisions also reflected legitimate business considerations: for example, the supplier did not believe the contract at issue was large or long enough to justify offering a lower price, or the supplier recognized it was not likely to be competitive due to its location and the high cost of transporting hydrogen peroxide. DPFCL at 76 ¶ 198; *see, e.g.*, Montag Hrg. Tr. 1569:2–1570:19; *id.* 1574:14–1576:5 (discussing PX2190-001 and that PeroxyChem sought a long-term commitment to justify the investment necessary to serve the customer); PX1074; PX2337-001; PX2501-001.

In summary, the evidence does not show that suppliers are coordinating in the hydrogen peroxide market to keep prices artificially high. As Defendants argued, “a market in which the prices are falling is one in which it’s very unlikely that coordination is happening among suppliers. If they are [coordinating], they’re doing a terrible, terrible job of it.” Mahr Hrg. Tr. 2312:24–2313:2. Rather, despite the relatively few suppliers and low demand elasticity, suppliers appear to bid aggressively to win large and long-term contracts from sophisticated

customers. While the “structure and dynamics of the . . . market may *permit* coordination,” in this case they “do not make coordination *likely*.” *Arch Coal*, 329 F. Supp. 2d at 140.

2. The Proposed Merger’s Effect on Coordination

The Merger Guidelines advise that even where a market “shows signs of vulnerability to coordinated conduct,” before challenging a merger, the FTC must also “have a credible basis on which to conclude that the merger may enhance that vulnerability.” § 7.1. The proposed merger of Evonik and PeroxyChem is unlikely to do so. None of the above-described features of the industry currently inhibiting coordination in the hydrogen peroxide market are likely to change post-merger. DPFCL at 78 ¶ 203. In other words, there is no reason to suspect that suppliers will not continue to participate in a blind bidding system for long-term and large contracts to win the business of sophisticated buyers.

The biggest change the proposed merger would bring about is to reduce the number of suppliers who own plants in the Southern and Central United States from five to four. PPFCL at 45 ¶ 151. That change relates directly to market concentration and the FTC’s *prima facie* case, and the Merger Guidelines suggest that the FTC must have an independent basis to conclude that a merger will increase the likelihood of coordination, apart from whatever evidence it offers to show undue market concentration. *See* § 7.1. In any event, there is no reason to think that reducing the number of hydrogen peroxide suppliers from five to four will likely lead to coordination. As described above, the industry is not especially vulnerable to it, and the record contains no evidence that suppliers are coordinating to raise prices or withhold supply in the FTC’s other proposed geographic market of the Pacific Northwest, in which only three suppliers operate.

The FTC also argues that Evonik, which has historically maintained a “price over volume” strategy, will be a market leader post-merger that can more easily discipline

competitors. PPFCL at 45–46 ¶ 154–57. Setting aside whether such market asymmetry in fact increases the likelihood of coordination, *see* Hill Rpt., JX0066-110 to -111, the FTC’s argument is speculative and inconsistent with the record. Evonik is already the market leader in the Southern and Central United States, Rothman Rpt., JX0075-168, and so the scenario the FTC anticipates should have already come to pass. In fact, the evidence suggests the opposite. Evonik has consistently undercut other suppliers in the bidding process, *see, e.g.*, PPFCL at 67 ¶ 229; JX0112. And market-wide prices are *decreasing* even with Evonik as the dominant player, *see* Hill Rpt., JX0066-097 to -099.

Moreover, even if suppliers act contrary to that evidence and try to coordinate, Nouryon remains positioned to disrupt that behavior. “[C]ollective market power is diminished by the presence of other market participants with small market shares and little stake in the outcome resulting from the coordinated conduct, if these firms can rapidly expand their sales in the relevant market.” Merger Guidelines § 7.2. Nouryon is well situated to expand its hydrogen peroxide sales in the event of a price increase because it (1) is “the smallest of all of the competitors,” Radlinski Hrg. Tr. 538:15; (2) has won business from suppliers in the past, [REDACTED]; and (3) has over [REDACTED] pounds of excess capacity at its Columbus, Mississippi, plant with only an [REDACTED] utilization rate, Radlinski Decl., JX0009-002; Radlinski Hrg. Tr. 545:17–21; Hill Rpt. JX0066-109.³²

³² The FTC relies on a benign remark by Nouryon’s Paul Radlinski to argue that [REDACTED] PPFCL at 54 ¶ 179. But Radlinski testified that Nouryon— [REDACTED] Hrg. Tr. 545:22–546:16. [REDACTED], *See id.* 545:17–21 ([REDACTED]).

While “the risk that a merger will induce adverse coordinated effects may not be susceptible to quantification or detailed proof,” the FTC must still “have a credible basis on which to conclude that the merger may enhance that vulnerability.” Merger Guidelines § 7.1. It does not come close to meeting that standard.

3. The Proposed Merger’s Unilateral Effects

The FTC has also failed to show that the proposed merger is likely to have substantial unilateral effects. “A merger is likely to have unilateral anticompetitive effect if the acquiring firm will have the incentive to raise prices or reduce quality after the acquisition, independent of competitive responses from other firms.” *H & R Block*, 833 F. Supp. 2d at 81. In industries like hydrogen peroxide where buyers negotiate with sellers and play sellers off each other, “[a]nticompetitive unilateral effects . . . are likely in proportion to the frequency or probability with which, prior to the merger, one of the merging sellers had been the runner-up when the other won the business.” Merger Guidelines § 6.2. To be sure, the evidence suggests that Evonik and PeroxyChem compete head-to-head for *some* hydrogen peroxide customers, for *some* end uses. See PPFCL at 49–50 ¶ 167. As a result, the loss of PeroxyChem as a competitor may lead to a price increase for *some* customers. But the question for the Court is whether the proposed merger, as a whole, is likely to “substantially . . . lessen competition.” 15 U.S.C. § 18. The evidence does not show that to be so.

A quantitative analysis of the unilateral effects, like market concentration, is impossible without data reflecting a properly defined relevant market, bounded by both product and geography. The FTC’s expert, Dr. Rothman, offered two economic models to illuminate the merger’s likely unilateral effects, the “GUPPI” and the “second-score procurement merger simulation model,” Rothman Rpt., JX0075-088, -100, both of which rely on markets the Court has rejected. The GUPPI model—which predicts “upward pricing pressure” or “the magnitude

of the changes in incentives to compete aggressively”—relies on market shares of those ill-defined markets to measure customers’ preferences for Evonik or PeroxyChem.³³ *Id.* -089, -091.

Likewise, Dr. Rothman’s second-score procurement merger simulation model—which “estimate[s] the likelihood that Evonik and PeroxyChem are the two-highest surplus bidders for customers”—relies on (1) “market shares,” and (2) transaction data aggregated “for all . . . non-electronics hydrogen peroxide, as well as for . . . standard grade hydrogen peroxide only”, *id.* -102, both of which are based on the FTC’s ill-conceived product and geographic markets. The model then predicts price increases for all non-electronics grade hydrogen peroxide—and for an alternative standard grade hydrogen peroxide product market—in the Southern and Central United States as well as in alternative geographic markets in the Southern, Central, and Western United States. *Id.* -103 to -106 & nn.349–50, 354, 356, 358. The problem is that the FTC has not shown that the model’s “inputs” or “outputs” are grounded in relevant product or geographic markets. The Court cannot assume that suppliers compete just as closely in smaller product-geography cross-sections of the market; in fact, in many situations, that is clearly not the case. And for these reasons, there is no basis for the Court to assume that the total predicted effect of the merger calculated by Dr. Rothman is merely the sum total of these smaller product-geography cross-sections. Because the Court has found the FTC’s proposed product and

³³ Even setting aside the GUPPI’s market-share input, the model is unreliable here because: (1) the Merger Guidelines only recommend using the GUPPI to predict upward pricing pressure for “differentiated products,” § 6.1, and the products here are homogenous within each relevant product market (hydrogen peroxide formulated for a specific end use), *see* Hill Rpt., JX0066-084 to -085; (2) the GUPPI “assumes that customers have little or no bargaining power,” Rothman Rpt., JX0075-088, which is not the case with hydrogen peroxide customers; and (3) accurate GUPPI results “require[] precise information on pass-through behavior,” and Dr. Rothman provides no evidence to support his .8 pass-through rate of cost to price, *see* Hill Rpt., JX0066-086 to -089.

geographic markets wanting, Dr. Rothman's models are of little use to the FTC in showing likely unilateral effects of the merger.

The remaining qualitative evidence in the record, to the extent that it is instructive given the lack of a properly defined market, suggests that the proposed merger is unlikely to cause unilateral effects that substantially lessen competition. This is so in large part because in general, Evonik and PeroxyChem are not close competitors. Evonik's Mobile, Alabama plant and PeroxyChem's Bayport, Texas plant—their two facilities in the Southern and Central United States—largely sell hydrogen peroxide intended for different end uses. Hill Rpt., JX0066-057; *see* DPFCL at 86–88 ¶¶ 230–35. For example, about █ percent of Evonik's production at Mobile is standard grade hydrogen peroxide sold to pulp and paper customers, while only about █ percent of PeroxyChem's Bayport production serves the pulp and paper industry, and that number is shrinking. *See* DPFCL at 85, 88 ¶¶ 229, 235. Evonik and PeroxyChem also have different geographic focuses, largely because of the significant freight costs for the shipment of hydrogen peroxide and the location of their plants over 450 miles apart. *See id.* at 88–90 ¶¶ 236–41. The closest possible market competitors for Evonik's Mobile plant are Nouryon's plant in Columbus, Mississippi, and Arkema's plant in Memphis, Tennessee. *Id.* at 89 ¶ 240. The closest possible competitor for PeroxyChem's Bayport plant is Solvay's in Deer Park, Texas, fewer than 10 miles away. *Id.*

After Evonik and PeroxyChem merge, those three competitors are well positioned to check Evonik during the bidding process. Executives for Nouryon, Arkema, and Solvay testified that because of the blind bidding system and the sophistication of their customers, they compete just as aggressively to win contracts no matter how many bidders are involved. *See* Radlinski Hrg. Tr. 574:18–25; Myrick Hrg. Tr. 507:17–508:6; Suter Hrg. Tr. 439:7–17. Nouryon's Paul

Radlinski, General Manager for Bleaching Chemicals in North America, Europe, and Asia, has 38 years of experience with Nouryon and its predecessor company. Hrg. Tr. 536:19–24. He explained at the evidentiary hearing that suppliers do not know “whether it’s one, two or three or four” suppliers bidding on a given customer. *Id.* 587:14–17. “So my assumption is it’s always four when we go in to bid. And if it’s only one there, the customer’s not going to tell us, [w]ell, you were the second of four bids. They’re going to say, [y]our bid was not the lowest bid. You need to sharpen your pencils and bring us back a new offer.” *Id.* 587:17–21. “We don’t have transparency,” so “it’s just as competitive with one other competitor as it is with three.” *Id.* 588:3, 588:9–11. Because blind bidding in the hydrogen peroxide is “all or nothing,” “to win the business, you have to beat everybody,” whether it is one or three competitors. *Id.* 588:17, 589:6.

Finally, unlike many cases in which the FTC alleges that a proposed merger would be anticompetitive, the record contains *no* evidence that Evonik intends to raise prices post-merger. DPFCL at 62–63 ¶¶ 162–63; *cf.*, *e.g.*, *Tronox*, 332 F. Supp. 3d at 208 (merging company planned to “slow down” or “manag[e]” production so that “prices will rise”); *Wilhelmsen*, 341 F. Supp. 3d at 63 (internal document noted that if merger closed, it would “increase our ability to charge far better prices”). Of course, such a smoking gun is not necessary for the FTC to meet its burden. But here, the evidence reflects a perfectly legitimate reason why Evonik and PeroxyChem would want to merge that has nothing to do with raising prices: the businesses complement each other. The Chairman of Resource Efficiency for Evonik, Claus Rettig, credibly testified that the reason the proposed merger is attractive to Evonik is that it wants to expand into the specialty grade hydrogen peroxide market on which PeroxyChem focuses. *See* Rettig Hrg. Tr. 1047:13–17, 1053:1–9. Those specialty grade products “promise higher returns in terms of profitability” and “are more stable in economic downturns” relative to pulp and paper

products, *id.* 1047:14–15, particularly given the number of newsprint customers that have gone out of business. *See* Corson Hrg. Tr. 640:14–641:2, 651:18–21.

Lacking a smoking gun, the FTC fires away with a few squirt guns: (1) a poorly informed third-party consultant’s report, based on transaction data only from ██████, predicting a price increase, JX0140; *see* PPFCL at 47–48 ¶ 161; DPFCL at 62–63 ¶ 163; (2) a 2019 Evonik internal presentation with a demand curve reflecting that *if* Evonik chose to raise prices, its sales quantity would decrease, JX0129-037 to -038; *see* PPFCL at 46 ¶ 156; DPFCL at 77 ¶ 200; (3) emails exchanged between a competitor’s employees, shortly after Evonik and PeroxyChem announced the proposed merger, expressing hope that the industry’s falling prices would finally plateau;³⁴ and (4) out-of-court declarations by customers reflecting “a truism of economics: a decrease in the number of suppliers *may* lead to a decrease in the level of competition in the market.” *Arch Coal*, 329 F. Supp. 2d at 146; *see* PPFCL at 51 ¶ 170. But customers “do not, of course, have the expertise to state what *will* happen in the [hydrogen peroxide] market, and none have attempted to do so.” *Arch Coal*, 329 F. Supp. 2d at 146. These declarations are not enough to outweigh the overall trends in the hydrogen peroxide market reflected in the record: decreasing prices, aggressive competition for sophisticated customers with large and long-term contracts, and substantial cost savings from blind bidding. *See* DPFCL at 57–62 ¶¶ 150–61.³⁵

³⁴ Defendants objected to the admission of these two exhibits, PX3000 and PX3020, emails exchanged by ██████ employees. *See* ECF No. 139-1. The Court overrules the objections and admits them, but gives them little weight. Documents such as these appear highly speculative, and because most of their authors did not testify, the Court has little basis to assess their reliability. Indeed, the FTC did not even bother to ask ██████—the only author who *did* testify—about them. *See* DPFCL at 62 n.378.

³⁵ Defendants argue that efficiencies or “logistics savings” from their merger may *reduce* the price of hydrogen peroxide or offset any predicted price increase, DPFCL at 96–97 ¶ 258, but those purported savings are unverifiable and did not weigh into the Court’s analysis. *See*

As with the FTC’s shortcomings in showing undue concentration in a relevant market, the Court does not mean to suggest that in a later administrative proceeding, it would be impossible for the FTC to show coordinated or unilateral effects, based on a properly defined product and geographic market, that could call the merger into question. But it does not win the day on the record here. “Section 7 involves *probabilities*, not . . . possibilities,” *Baker Hughes*, 908 F.2d at 984, and on this record the Court cannot say it is probable that the merger will substantially harm competition.

For all these reasons, the FTC has not met its burden of showing a likelihood of success on the merits.

C. The Equities

The Federal Trade Commission Act provides for a preliminary injunction to block a merger when “such action would be in the public interest,” after “weighing the equities and considering the Commission’s likelihood of ultimate success.” 15 U.S.C. § 53(b); *see Heinz*, 246 F.3d at 726. “The primary public interest favoring preliminary injunctive relief in a Section 13(b) case, which Congress specifically contemplated, is the effective enforcement of the antitrust laws. . . . Absent a likelihood of success on the merits, however, equities alone will not justify an injunction.” *Arch Coal*, 329 F. Supp. 2d at 159.

The parties devote little discussion to the equities. They recognize that the propriety of a preliminary injunction typically rises and falls with the FTC’s likelihood of success on the merits and the public interest in enforcing antitrust laws. PPFCL at 99–100 ¶¶ 81–82; DPFCL at 100 ¶ 269. Even so, the FTC argues that without a preliminary injunction, Defendants can “scramble the eggs”—that is, combine their operations and make it difficult, if not impossible,

PPFCL at 76–77 ¶¶ 260–61; *Aetna*, 240 F. Supp. 3d at 94 (“the estimate of the predicted saving must be reasonable verifiable by an independent party”).

for competition to be restored to its previous state.” PPFCL at 100 ¶ 82. For their part, Defendants represent that if the Court grants the FTC a preliminary injunction, “the final closing date will pass on February 3, 2020, and commercial imperatives will force the merging parties to terminate their merger agreement.” DPFCL at 16 ¶ 45; *see* Mahr Hrg. Tr. 2439:4–5. But there is no need for the Court to resolve these competing equities. For all the reason explained above, the FTC has not carried its burden of showing that it is likely that the proposed merger will substantially lessen competition for a particular product in a particular geographic market. The Court must therefore deny its request for a preliminary injunction.

IV. Conclusion

For all of the above reasons, the Court will deny the FTC’s Motion for Preliminary Injunction, ECF No. 3. A separate order will issue.

/s/ Timothy J. Kelly
TIMOTHY J. KELLY
United States District Judge

Date: January 24, 2020