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UNITED STATES COURT OF APPEALS
FOR THE SIXTH CIRCUIT

ECM BIOFILMS, INC.,

Petitioner,

v.

FEDERAL TRADE COMMISSION,

Respondent.

No. 15-4339

On Petition for Review of an Order
of the Federal Trade Commission.

No. 9358.

Argued: July 28, 2016

Decided and Filed: March 16, 2017

Before: WHITE and STRANCH, Circuit Judges; MICHELSON, District Judge.*

COUNSEL

ARGUED: Jonathan W. Emord, EMORD & ASSOCIATES, P.C., Clifton, Virginia, for Petitioner. Theodore Metzler, FEDERAL TRADE COMMISSION, Washington, D.C., for Respondent. **ON BRIEF:** Jonathan W. Emord, Peter A. Arhangelsky, EMORD & ASSOCIATES, P.C., Clifton, Virginia, for Petitioner. Theodore Metzler, FEDERAL TRADE COMMISSION, Washington, D.C., for Respondent. Steven J. Grossman, GROSSMAN, TUCKER ET AL, Manchester, New Hampshire, for Amicus Curiae.

*The Honorable Laurie J. Michelson, United States District Judge for the Eastern District of Michigan, sitting by designation.

OPINION

JANE B. STRANCH, Circuit Judge. ECM BioFilms, Inc. manufactures an additive that it claims accelerates the rate at which plastic biodegrades. In October 2013, the Federal Trade Commission (FTC) filed an administrative complaint against ECM, which alleged that several of ECM's biodegradability claims were deceptive. The full Commission ultimately found that three of ECM's claims were false and misleading under § 5 of the FTC Act (15 U.S.C. § 45). ECM appeals the Commission's decision with regard to only one of the claims, arguing that it was unsupported by substantial evidence. ECM also contends that the Commission violated its rights under the First Amendment, the Administrative Procedures Act (APA), and the Due Process Clause of the Fifth Amendment. We disagree and **DENY** the petition for review.

I. BACKGROUND

More than half of all plastic waste ends up in landfills, where it can take thousands of years to biodegrade. In recent years, some environmentally-conscious consumers have turned away from traditional plastics in favor of products that biodegrade at a more rapid rate. In response to this trend, manufacturers of plastic products have begun to look for ways to increase the biodegradability of their products. ECM BioFilms sells an additive that it claims will accelerate the biodegradation of plastics manufactured with the additive (which we will refer to as “ECM plastic”).

A. ECM's biodegradability claims

ECM's claims regarding the biodegradability of ECM plastic have changed over the years. Before 2009, ECM did not market a specific time frame for biodegradation, but did represent that ECM plastic would biodegrade “in timeframes that would be similar to things like wood or pieces of sticks.” Responding to industry demands for specific time frames, in 2009 or 2010 ECM began advertising that ECM plastic would “fully biodegrade” in a “landfill” within nine months to five years. ECM placed this representation on its marketing materials and website. The administrative law judge (ALJ) overseeing this case concluded this claim was false

and unsubstantiated. As the ALJ observed, “All of the experts in this case agreed that ECM Plastics do not fully biodegrade in 9 months to 5 years in a landfill.” The Commission also concluded that “the clear consensus among both parties’ experts” was that “ECM lacks substantiation for its express and implied claims that ECM Plastics fully biodegrade in landfills within 5 years.” ECM no longer contends otherwise.

ECM also provided plastic manufacturers with material to market their products as biodegradable, including a logo marked “ECM Biodegradable” against a tree design. Millions of plastic products were manufactured with this representation or similar representations, including “plastic dinnerware, straws, and ‘clam shell’ carry-out containers, restaurant and grocery bags, trash bags, and shampoo and conditioner bottles.” Some of ECM’s plastic-manufacturer customers also advertised that their plastics would biodegrade in nine months to five years in a landfill.

In 2012, the FTC revised its “Green Guides,” which are intended to “help marketers avoid making environmental marketing claims that are unfair or deceptive under Section 5 of the FTC Act.” 16 C.F.R. § 260.1(a). The previous version of the Guides, issued in 1996, advised that an unqualified claim that a product is biodegradable “should be substantiated by competent and reliable scientific evidence that the entire product or package will completely break down and return to nature . . . within *a reasonably short period of time* after customary disposal.” Guides for the Use of Environmental Marketing Claims, 61 Fed. Reg. 53311, 53318 (Oct. 11, 1996) (emphasis added). The 2012 Guides advised that “[i]t is deceptive to make an unqualified degradable claim for items entering the solid waste stream if the items do not completely decompose *within one year* after customary disposal.” (16 C.F.R. § 260.8(c) (emphasis added). Additionally, with regard to items customarily disposed of in landfills, the 2012 Guides advised that any unqualified biodegradable claim would be deceptive “because these locations do not present conditions in which complete decomposition will occur within one year.” *Id.*

After the FTC issued the 2012 Guides, ECM revised its marketing materials and logo. ECM placed an asterisk next to the word “biodegradable” and clarified that “[p]lastic products manufactured with [the ECM additive] will biodegrade in any biologically-active environment (including most landfills) in some period greater than a year.” However, ECM continued to

make the “nine months to five years” claim on its website until late 2013, and in direct communications with customers until January 2014.

B. Scientific tests of ECM plastic

Scientists disagree on the precise definition of the term “biodegradable.” Most commonly, scientists define biodegradable material as material that can be broken down by biological agents, such as bacteria or fungi. Biodegradability is a property of a material, similar to color, weight, or density. A material’s rate of biodegradation depends on the environment in which biodegradation occurs. Because biodegradation occurs at different rates in different environments, in evaluating the biodegradability of a material, scientists focus on its “intrinsic biodegradability.” That is, they do not estimate the time for complete biodegradation, but instead evaluate the material’s rate of biodegradation in various environments, as well as how this rate compares with other biodegradable materials.

The most practical and widely-used scientific method for measuring the intrinsic biodegradability of a material is gas evolution testing. Of the available gas evolution tests, the D5511 protocol provides the best approximation of plastic biodegradation in landfill conditions. Landfills are predominantly anaerobic environments, and the D5511 method measures “the degree and rate of anaerobic biodegradation of plastic materials.” The D5511 protocol provides, however, that claims of performance are to be limited to the numerical result obtained in the test and are “not be used for unqualified ‘biodegradable’ claims.” It also provides that results are not to be extrapolated past the actual duration of the test.

A number of different laboratories performed D5511 biodegradation tests on plastics manufactured with ECM’s additive. ECM points to nineteen laboratory tests that, it claims, demonstrate that ECM plastic biodegrades at a faster rate than traditional plastic. In one test, for instance, ECM plastic biodegraded 49.28% over 900 days, whereas traditional plastic biodegraded just 0.1152% over the same time. The FTC, in turn, points to thirteen tests that, it alleges, indicate that ECM’s additive does not accelerate biodegradation.

C. Consumer understanding of biodegradability claims

Both ECM and the FTC rely on consumer surveys to establish consumer understanding of biodegradability claims. The FTC's survey was conducted by Dr. Shane Frederick, a professor of marketing at Yale University's School of Management.¹ Using an online survey tool available through Google Consumer Surveys, Dr. Frederick asked respondents one of 60 different questions, collecting nearly 29,000 responses.² Dr. Frederick found that, at a minimum, adding a "biodegradable" label to a plastic bottle increased the percentage of respondents who believed the bottle would fully decompose within five years from 13% to between 44% and 49%. Similarly adding a "biodegradable" label to a plastic "Tupperware" container increased the percentage of respondents who believed the container would fully decompose within five years from 16% to 44%; and adding a "biodegradable" label caused an additional 20% of respondents to believe that a plastic bag would fully decompose within five years (increasing the percentage from 21% to 41%).³ This data led the Commission to conclude that adding the biodegradable label leads a "significant minority of reasonable consumers to believe that the plastic product will biodegrade within five years."

ECM's survey was conducted by Dr. David Stewart, a professor of marketing and business law at Loyola Marymount University. Dr. Stewart surveyed 400 respondents by landline telephone asking five questions, some of which contained one or more sub-questions. In one question, respondents were asked, "If something is biodegradable, how long do you think it

¹Complaint counsel offered two other consumers surveys that were rejected by the Commission and are not at issue on appeal.

²When the tool used by Dr. Fredericks is employed, "an internet user encounters a 'pop-up' survey question when attempting to access desired content on a website; the user is blocked from access to the desired content unless he or she answers the survey question or pays for access to the desired content without answering."

³A portion of respondents did not respond with a number and unit of time. Dr. Frederick's original survey did not "code" these responses, thus excluding them from his analysis, and ECM argued that this omission biased his results. In its review of these arguments, the Commission observed that "[o]mitting the uncoded responses would only affect the results if the respondents whose answers were not coded as a group held different views on biodegradation times than the remainder of the population; however, there is no reason to believe that is the case here." Nevertheless, the Commission recalculated Dr. Frederick's results by counting every uncertain, ambiguous, or unclear response as "stating an expectation that biodegradation will take more than five years." The Commission found that "even if *all* of the responses excluded by Dr. Frederick's coding rule were included in the denominator with no adjustment to the numerator . . . the results still support Dr. Frederick's findings." We rely on the more conservative, recalculated survey results.

would take for it to decompose or decay?” Of the respondents who provided an answer to this question with a number and unit of time, 64% said that it would decompose within five years. By Dr. Stewart’s own calculations, these respondents represented 23% of the survey’s 400 respondents.⁴

D. Procedural history

In October 2013, the FTC filed an administrative complaint alleging that ECM’s biodegradability representations were false and misleading, and thus violated § 5 of the FTC Act. The complaint asserted that ECM’s express representation that ECM plastic would completely biodegrade within nine months to five years was unsupported by scientific evidence. It also alleged that “[c]onsumers likely interpret unqualified degradable claims to mean that the entire product or package will completely decompose into elements found in nature within a reasonably short period of time after customary disposal.” Because ECM plastic does not fully biodegrade within a reasonably short time, the complaint alleged, this implied claim was misleading.

An ALJ held a three-week trial in August 2014. The ALJ concluded that ECM’s express claim that ECM plastic would completely biodegrade in a landfill within nine months to five years was false and unsubstantiated. He also determined, however, that the FTC had failed to prove that ECM’s remaining biodegradability claims were misleading because the FTC failed to prove ECM had made an “implied one year claim.” The ALJ’s decision was based, in part, on perceived methodological problems with Dr. Frederick’s survey.

The parties then filed cross appeals to the Commission. In October 2015, the Commission affirmed the ALJ’s decision with regard to ECM’s express claim that ECM plastic would fully biodegrade within five years. The Commission reversed on the other biodegradability claims, finding that ECM had made implied claims that ECM plastic would fully biodegrade within a reasonably short period of time, i.e., within five years. Commissioner Maureen K. Ohlhausen partially dissented from the Commission’s order.

⁴This is a conservative figure. The Commission calculated 119 responses of five years or less, which would constitute 30% of the 400 survey respondents. “To be conservative,” the Commission noted that it relied “only on the smaller figure cited in the text and validated by Dr. Stewart.” Additionally, Dr. Frederick reviewed the “verbatim responses from Dr. Stewart’s survey,” and found 138 responses of five years or less, which would constitute 35% of the 400 survey respondents.

The Commission's order prohibits ECM from making biodegradability claims "unless such representation is true, not misleading, and, at the time it is made, respondent possesses and relies upon competent and reliable scientific evidence that substantiates the representation," and

- I.A.i. the entire item will completely decompose into elements found in nature within five (5) years after customary disposal; or
- ii. the representation is clearly and prominently and in close proximity qualified by:
 - a. Either (1) the time to complete decomposition into elements found in nature; or (2) the rate and extent of decomposition into elements found in nature, provided that such qualification must disclose that the stated rate and extent of decomposition does not mean that the product or package will continue to decompose; and
 - b. If the product will not decompose in a customary disposal facility or by a customary method of disposal, both (1) the type of non-customary disposal facility or method and (2) the availability of such disposal facility or method to consumers where the product or package is marketed or sold.

(App. at 4–5, 403–04)

The Commission's order specifies the "competent and reliable scientific evidence" needed to substantiate a biodegradability claim, setting different standards for unqualified claims (that is, claims that simply use the term "biodegradable"), and qualified claims (claims that cabin the meaning of the word, such as by referring to the rate of degradation and the circumstances of disposal). To make an unqualified biodegradability claim, "any scientific technical protocol (or combination of protocols) substantiating such claims must assure complete decomposition and simulate the physical conditions found in landfills, where most trash is disposed." (*Id.* at 3) Results from the D5511 protocol, the order explains, "are not competent and reliable scientific evidence supporting *unqualified* claims, or claims of outcomes beyond the parameters and results of the actual test performed." (*Id.*) (emphasis added) To make a qualified biodegradability claim,

any scientific technical protocol (or combination of protocols) substantiating such claims must both:

- i. assure the entire product will (1) completely decompose into elements found in nature in any stated timeframe . . . ; or

- (2) decompose into elements found in nature at the rate and to the extent stated in the representation; and
- ii. simulate the physical conditions found in the type of disposal facility or method stated in the representation or, if not qualified by disposal facility or method, the conditions found in landfills, where most trash is disposed.

(*Id.*) The order does not bar ECM from using results of D5511 tests to substantiate a qualified biodegradability claim.

Lastly, because “ECM’s violations were serious, repeated, and deliberate,” the Commission’s order also includes “fencing-in relief to prevent the company from engaging in deceptive practices that are ‘like and related’ to the violating practice ‘as a prophylactic and preventative measure.’” (App. at 404 (quoting *FTC v. Mandel*, 359 U.S. 385, 393 (1959))) Specifically, the order prohibits ECM from claiming that any product “offers any environmental benefit, unless the representation is true, not misleading, and, at the time it is made, respondent possesses and relies upon competent and reliable evidence, which when appropriate must be competent and reliable scientific evidence, that substantiates the representation.” (App. at 5, 403–04)

II. ANALYSIS

On appeal, ECM contends that the Commission’s order was not supported by substantial evidence—and, therefore, that the Commission should not have found ECM liable for violating § 5 of the FTC Act—and that the Commission’s order violated the First Amendment, the APA, and the Due Process Clause of the Fifth Amendment. We address each of ECM’s challenges in turn.

A. Section 5 of the FTC Act

We begin by reviewing the Commission’s holding that ECM’s marketing materials violated § 5 of the FTC Act.⁵ In conducting this review, “[t]he findings of the Commission as to

⁵ECM does not expressly contest the Commission’s order under § 5. Instead, it argues that the Commission violated the APA. Most of ECM’s APA arguments, however, amount to assertions that the Commission lacked adequate evidence to support its findings under § 5. Those arguments are addressed here. ECM’s remaining APA arguments are addressed in a later section.

the facts, if supported by evidence, shall be conclusive.” 15 U.S.C. § 45(c). This standard is “essentially identical” to the “‘substantial evidence’ standard for review of agency factfinding.” *F.T.C. v. Ind. Fed’n of Dentists*, 476 U.S. 447, 454 (1986). “Substantial evidence is evidence that a reasonable mind might accept as adequate to support a conclusion,” *ProMedica Health Sys., Inc. v. F.T.C.*, 749 F.3d 559, 564 (6th Cir. 2014) (internal quotation marks and citation omitted), which “requires more than a mere scintilla but less than a preponderance,” *Miller v. Comm’r of Soc. Sec.*, 811 F.3d 825, 833 (6th Cir. 2016) (internal quotation marks omitted).

Section 5 of the FTC Act prohibits the use of deceptive advertising in commerce and empowers and directs the Commission to prevent such advertising. *See* 15 U.S.C. § 45(a). The Commission determines whether an advertisement is deceptive by engaging “in a three-step inquiry, considering: (i) what claims are conveyed in the ad, (ii) whether those claims are false, misleading, or unsubstantiated, and (iii) whether the claims are material to prospective consumers.” *POM Wonderful, LLC v. F.T.C.*, 777 F.3d 478, 490 (D.C. Cir. 2015), *cert. denied*, 136 S. Ct. 1839 (2016). Because the FTC “deals continually” with deception cases, “the Commission is often in a better position than are courts to determine when a practice is ‘deceptive.’” *F.T.C. v. Colgate-Palmolive Co.*, 380 U.S. 374, 385 (1965); *see also Buchanan v. Northland Grp., Inc.*, 776 F.3d 393, 398 (6th Cir. 2015) (quoting *Colgate-Palmolive* for this proposition). Accordingly, “the Commission’s judgment is to be given great weight by reviewing courts,” and “[t]his admonition is especially true with respect to allegedly deceptive advertising since the finding of a § 5 violation in this field rests so heavily on inference and pragmatic judgment.” *Colgate-Palmolive*, 380 U.S. at 385.

ECM appeals the Commission’s findings with respect to only one of its claims: its representation that ECM plastic is “biodegradable” without reference to any time frame—that is, its “unqualified biodegradability claim.”⁶ The Commission rejected ECM’s argument that the

⁶The Commission held ECM liable for two other representations, neither of which is raised on appeal. First, ECM claimed that plastics manufactured with its additive would biodegrade in a landfill within nine months to five years. The ALJ ruled that this claim was false and unsubstantiated, and ECM did not appeal that ruling to the Commission, though it did argue that this claim was not material. The Commission rejected this argument, holding that the claim was material. ECM has not appealed the Commission’s finding.

Second, ECM claimed that plastics manufactured with its additive would biodegrade in “most landfills” in “some period greater than a year.” The Commission ruled that this claim was facially deceptive because the claim’s

term “biodegradable” conveys only that a product is “intrinsically” biodegradable, and concluded that the preponderance of the evidence showed that ECM’s unqualified biodegradability claim implied that ECM plastics “will completely break down in landfills within a reasonably short period of time, *i.e.*, within five years.”

ECM does not dispute that this implied claim, if made, was false. Nor does it dispute that this implied claim would be material to its customers. Accordingly, we limit our analysis to whether substantial evidence supports the Commission’s finding that ECM’s unqualified biodegradability claim did, in fact, convey the implied claim that ECM plastic completely biodegrades within five years. *See POM Wonderful*, 777 F.3d at 491; *see also Removatron Int’l Corp. v. F.T.C.*, 884 F.2d 1489, 1496 (1st Cir. 1989) (“The Commission’s findings with respect to what representations are made in advertisements are factual.”).

The Commission “will deem an advertisement to convey a claim if consumers acting reasonably under the circumstances would interpret the advertisement to contain that message.” *POM Wonderful*, 777 F.3d. at 490 (citation omitted). In making this determination, the Commission “examines the overall net impression of an ad,” and may rely on both its own viewing of the ad and extrinsic evidence. *See Kraft, Inc. v. F.T.C.*, 970 F.2d 311, 314, 318 (7th Cir. 1992). “An interpretation may be reasonable even though it is not shared by a majority of consumers in the relevant class, or by particularly sophisticated consumers.” FTC Policy Statement on Deception, 103 F.T.C. 174, 177 n.20 (1984). The Commission thus “considers whether at least a significant minority of reasonable consumers would likely interpret the ad to assert the claim.” *POM Wonderful*, 777 F.3d at 490 (internal quotation marks omitted); *see also Fanning v. F.T.C.*, 821 F.3d 164, 171 (1st Cir. 2016) (“Liability may be imposed if at least a significant minority of reasonable consumers [would be] likely to take away the misleading claim.”) (internal quotation marks omitted). We have previously expressed unwillingness “to overturn the deception findings of the Commission” where an ad misleads “15% (or 10%) of the

reference to one year had an “anchoring effect” conveying the message that the time for biodegradation would be reasonably short—perhaps longer than a year, but not a lot longer. The Commission supported this facial analysis with findings from the consumer surveys of Dr. Stewart and Dr. Frederick. Dr. Stewart found that 24% of respondents inferred that the plastic would biodegrade in one year. Dr. Frederick found that 54% of respondents who provided a time period inferred that the plastic would biodegrade in less than five years and, of this subset of respondents, 23% clustered around one year. ECM has not appealed the Commission’s finding with respect to this claim either.

buying public.” *Firestone Tire & Rubber Co. v. F. T. C.*, 481 F.2d 246, 249 (6th Cir. 1973); *see also In re Telebrands Corp.*, 140 F.T.C. 278, 291 (2005) (range of 10.5% to 17.3% “was sufficient to conclude that the challenged claims were communicated”), *aff’d*, 457 F.3d 354 (4th Cir. 2006).

Here, the Commission relied on two consumer surveys—a valid form of extrinsic evidence. *Telebrands Corp.*, 140 F.T.C. at 291. It relied on Dr. Frederick’s survey, which found that, at a minimum, adding a “biodegradable” label caused an additional 31% to 36% of respondents to believe that a plastic water bottle would fully decompose within five years; an additional 28% to believe that a plastic “Tupperware” container would fully decompose within five years; and an additional 20% to believe that a plastic bag would fully decompose within five years. The Commission also relied on the survey of ECM’s own expert, Dr. Stewart, which found that 23% of respondents expected something biodegradable to fully decompose within five years. Thus, both consumer surveys would appear to support the Commission’s finding that ECM’s unqualified biodegradability claim conveyed the implied claim to a significant minority of consumers.

ECM argues that the Commission’s finding was not supported by substantial evidence for two reasons. ECM first argues that Dr. Frederick’s survey is unreliable. However, the Commission convincingly rebutted each of ECM’s criticisms, in detail and with extensive citation to the record. Evaluation of consumer survey evidence is within the Commission’s expertise, and we accord its judgment “great weight.” *See Colgate-Palmolive*, 380 U.S. at 385. Thus, Dr. Frederick’s survey constitutes substantial evidence in support of the Commission’s finding. Furthermore, ECM does not contest Dr. Stewart’s survey results, which also support the Commission’s finding. Throughout its brief, ECM extols Dr. Stewart’s expertise and survey methodology. Because Dr. Stewart’s survey constitutes substantial evidence on its own, the alleged deficiencies in Dr. Frederick’s survey are immaterial.

ECM also argues that these consumers, even if a significant minority, were not “acting reasonably under the circumstances.” *POM Wonderful*, 777 F.3d at 490. ECM contends that these consumers are not acting reasonably because “nothing biodegrades within five years” and their understanding of biodegradability is unscientific. But the scientific validity of a consumer’s

belief is not the standard for reasonableness. Rather, “[i]n considering charges of false and deceptive advertising, the public’s impression is the only true measure of deceptiveness.” *F.T.C. v. Brown & Williamson Tobacco Corp.*, 778 F.2d 35, 39–40 (D.C. Cir. 1985); *see id.* at 41 (noting that in *Zauderer v. Office of Disciplinary Counsel of Sup. Ct. of Ohio*, 471 U.S. 626, 652 (1985), the Supreme Court implied that “in situations involving ‘technical . . . terms,’ it may become reasonable to assume that members of the public may be ‘unaware of the . . . meanings of such terms’ and that ‘substantial numbers’ might be misled”); *see also In re Thompson Med. Co., Inc.*, 104 F.T.C. 648, 839 & n.33 (1984) (concluding that scientific understandings are not the measure of reasonableness because “scientific and popular understandings are known to vary on occasion” and “average consumers” might not understand the representation “as would a scientist”), *aff’d*, 791 F.2d 189 (D.C. Cir. 1986). Moreover, ECM itself represented to plastic manufacturers that ECM plastic would biodegrade within five years. Certain of these plastic manufacturers found the claim reasonable enough to include on their products. If these sophisticated consumers accepted ECM’s claims, it stands to reason that it was reasonable for an average consumer to do the same.

We thus conclude that the Commission’s finding that ECM violated § 5 of the FTC Act was supported by substantial evidence.

B. APA challenges

The APA “requires us to uphold agency action unless it is ‘arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.’” *Nat’l Truck Equip. Ass’n v. Nat’l Highway Traffic Safety Admin.*, 711 F.3d 662, 667 (6th Cir. 2013) (quoting 5 U.S.C. § 706(2)(A)). An agency decision is arbitrary and capricious if

the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

Id. (quoting *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983)). In conducting this analysis, “our role is limited to reviewing the administrative record to determine whether there exists a rational connection between the facts found and the

choice made.” *Nat'l Truck Equip. Ass'n*, 711 F.3d at 667 (internal quotation marks omitted). We “appl[y] a harmless-error rule to APA cases, such that a mistake that has no bearing on the ultimate decision or causes no prejudice shall not be the basis for reversing an agency's determination.” *Sierra Club v. Slater*, 120 F.3d 623, 637 (6th Cir. 1997); *see also Rabbers v. Comm'r Soc. Sec. Admin.*, 582 F.3d 647, 654–55 (6th Cir. 2009).

ECM raises several APA challenges.⁷ First, ECM argues that the Commission ignored dispositive scientific evidence and erroneously concluded that thirteen tests undermined ECM's biodegradability claims. But the Commission did not rely on this finding to hold that the unqualified biodegradability claim was misleading; it relied on the finding that ECM plastic cannot fully biodegrade in a landfill within five years, which is undisputed. Accordingly, even if ECM is correct, the Commission's error was harmless.

Second, ECM argues that the Commission erroneously failed to explain significant departures from the ALJ's factual findings, including the credibility findings regarding the experts and the ALJ's related conclusions regarding the survey evidence. However, “under both the Administrative Procedure Act and [the FTC's] regulations, the Commission may exercise, on appeal from an initial decision by an administrative law judge, all powers which it would possess if it made the initial decision itself.” *Chrysler Corp. v. F.T.C.*, 561 F.2d 357, 362 (D.C. Cir. 1977); *see* 16 C.F.R. § 3.54(a). The Commission explained its departure from the ALJ's findings regarding the survey results, and thus the record does not support the conclusion that the Commission's decision “fail[s] to reflect attentive consideration to the [ALJ's] decision.” *Morall v. Drug Enf't Admin.*, 412 F.3d 165, 177 (D.C. Cir. 2005). True, “[w]hen the Commission overrules the ALJ and substitutes its own findings, we should carefully scrutinize the Commission's determinations of fact.” *In re Detroit Auto Dealers Ass'n, Inc.*, 955 F.2d 457, 469 (6th Cir. 1992). But that does not change the standard of review. Our task remains “to determine whether the Commission's findings are supported by substantial evidence,” and we uphold those findings if they are. *Id.* For the reasons given in our discussion of ECM's Section

⁷As discussed in footnote 4, ECM characterized its substantial evidence arguments as APA challenges. These arguments are better addressed through the framework of the FTC Act.

5 challenge, we are satisfied that there is substantial evidence to support the Commission’s decision to partially reverse the ALJ’s decision.

Third, ECM contends that the Commission misapplied the factors from *In re Pfizer Inc.*, 81 F.T.C. 23 (1972). The *Pfizer* factors are used to examine the substantiation needed for a claim. *See POM Wonderful*, 777 F.3d at 490–91. But the parties agreed at trial that the appropriate level of substantiation was “competent and reliable scientific evidence”—the standard the Commission applied on appeal. ECM has thus waived this argument. And, in any event, any error was harmless. It is now undisputed that no evidence supported the claim that ECM plastic would fully biodegrade within five years, so ECM would be liable under any level of required substantiation.

Fourth, ECM makes a passing reference to the Commission’s fencing-in relief, arguing that it was unnecessary because “there was no evidence of any actual purchase by an end-use consumer” of plastic manufactured with the ECM additive. But the record showed that the reason plastic manufacturers want to produce biodegradable plastic is to satisfy end-use consumer demand, which stems from environmental concerns. For instance, a representative from one plastic manufacturer testified that plastic manufacturers “were looking for a product they could mark as degradable to say that they were being, you know, environmentally sensitive.” Another testified that “[p]eople . . . don’t want to pollute the environment and this [biodegradable plastic] is what they choose to buy.” Accordingly, there was a rational connection between the facts in the record and the fencing-in relief.

Finally, ECM argues that the Commission’s order should not be enforced because it impinges on the Environmental Protection Agency’s (the EPA) authority to manage solid waste disposal. *See* 5 U.S.C. § 706(2)(C) (“The reviewing court shall . . . hold unlawful and set aside agency action, findings, and conclusions found to be . . . in excess of statutory jurisdiction, authority, or limitations . . .”). ECM alleges that the Commission’s order will coerce the plastics industry to abandon products that biodegrade in more than five years; the plastics industry will either produce more traditional plastics or develop plastic that biodegrades within five years; rapidly biodegrading plastic produces more methane gas, which is worse for the environment; and the EPA is engaged in an effort to collect methane gas at landfills, which

would be frustrated by rapidly-biodegrading plastics. By shifting market incentives, ECM concludes, the Commission will set national waste policies and thus invade the EPA's jurisdiction.

This far-fetched scenario is unworthy of serious consideration. No evidence in the record supports ECM's speculation about the possible effects of the Commission's order. More importantly, Congress "empowered and directed" the Commission to prevent deceptive acts and practices in the marketplace, FTC Act § 5, 15 U.S.C. § 45(a), and gave "the Commission an influential role in interpreting § 5 and in applying it to the facts of particular cases," *Colgate-Palmolive*, 380 U.S. at 385. Exercising such authority will invariably have marketplace effects. That does not render the initial Commission action—which was unquestionably within its statutory authority—unlawful.

C. First Amendment

We now turn to ECM's First Amendment challenge to the Commission's order. ECM contends that the Commission's order is an unconstitutional restriction on biodegradability claims, specifically ECM's right to disseminate truthful scientific information. It also argues, in the alternative, that its proposed disclaimer would have cured any deception and that the Commission's required disclaimers are unduly burdensome.

1. Standard of review for the Commission's factual findings

Before reaching the merits of ECM's First Amendment challenge, we must first decide the appropriate standard of review for the Commission's factual findings. ECM argues that in the First Amendment context, we must review the Commission's factual findings *de novo*, pointing to *Bose Corp. v. Consumers Union of U.S., Inc.*, 466 U.S. 485 (1984), and *Peel v. Attorney Registration & Disciplinary Commission of Illinois*, 496 U.S. 91 (1990). ECM is fighting an uphill battle: Both the D.C. and Seventh Circuits considered the same argument and rejected ECM's reading of *Bose* and *Peel*, *see, e.g., POM Wonderful*, 777 F.3d at 499 (citing *Novartis Corp. v. FTC*, 223 F.3d 783, 787 n.4 (D.C. Cir. 2000)); *Kraft, Inc. v. F.T.C.*, 970 F.2d 311, 317 (7th Cir. 1992), and no circuit has adopted ECM's reading.

We decline to apply *de novo* review for the reasons identified by the D.C. and Seventh Circuits. First, the Supreme Court provided no indication that it intended *Bose* or *Peel* to overrule the substantial-evidence standard for the Commission’s factual findings. *See Ind. Fed’n of Dentists*, 476 U.S. at 454; *United States v. O’Brien*, 560 U.S. 218, 224 (2010) (“If a precedent of this Court has direct application in a case, yet appears to rest on reasons rejected in some other line of decisions, the Court of Appeals should follow the case which directly controls, leaving to this Court the prerogative of overruling its own decisions.”) (citation omitted). To the contrary: as both the Seventh Circuit and the D.C. Circuit observed, *Bose* was a libel case, and the *Bose* Court “itself suggests that commercial speech might not warrant the higher standard of review established for libel cases.” *Kraft*, 970 F.2d at 317 (citing *Bose*, 466 U.S. at 504 n.22); *see also Brown & Williamson Tobacco Corp.*, 778 F.2d at 41 n.3 (same). Moreover, *Bose* and *Peel* “involved review of court decisions, and courts generally lack the Commission’s expertise in the field of deceptive advertising.” *Kraft*, 970 F.2d at 317. Thus, while there was little reason to defer to the factual findings of the lower courts in *Bose* and *Peel*, “Commission findings are well-suited to deferential review because they may require resolution of ‘exceedingly complex and technical factual issues.’” *Id.* (quoting *Zauderer*, 471 U.S. at 645). Given that this complexity is present in “virtually any field of commerce,” *Zauderer*, 471 U.S. at 645, ECM’s argument that the Commission lacks expertise in biodegradation science is not persuasive. Finally, unlike the “prophylactic regulation” in *Peel* that “completely prohibit[ed] an entire category of potentially misleading commercial speech,” here “the issue is whether an individualized FTC cease and desist order, prohibiting a particular set of deceptive ads, passes constitutional muster.” *Kraft*, 970 F.2d at 317. Like the Seventh Circuit, “[w]e find the restriction at issue in *Peel* and the one here sufficiently distinct to justify differing levels of appellate review.” *Id.* at 317–18.

We thus review “the Commission’s factual finding of a deceptive claim under the ordinary (and deferential) substantial-evidence standard.” *POM Wonderful*, 777 F.3d at 499. That is to say, the same standard under which we reviewed the Commission’s finding that ECM violated § 5 of the FTC Act.

2. Restrictions on biodegradability claims

We review prohibitions on commercial speech under the four-part test set forth in *Central Hudson Gas & Elec. Corp. v. Public Serv. Comm'n of N.Y.*, 447 U.S. 557 (1980), and disclaimer requirements under *Zauderer*. See *Int'l Dairy Foods Ass'n v. Boggs*, 622 F.3d 628, 635–36, 640–42 (6th Cir. 2010).

The Commission's order prohibits ECM from representing that ECM plastic is biodegradable “unless such representation is true, not misleading, and, at the time it is made, respondent possesses and relies upon competent and reliable scientific evidence that substantiates the representation,” and

- I.A.i. the entire item will completely decompose into elements found in nature within five (5) years after customary disposal; or
- ii. the representation is clearly and prominently and in close proximity qualified by:
 - a. Either (1) the time to complete decomposition into elements found in nature; or (2) the rate and extent of decomposition into elements found in nature, provided that such qualification must disclose that the stated rate and extent of decomposition does not mean that the product or package will continue to decompose; and
 - b. If the product will not decompose in a customary disposal facility or by a customary method of disposal, both (1) the type of non-customary disposal facility or method and (2) the availability of such disposal facility or method to consumers where the product or package is marketed or sold.

(App. at 4–5, 403–04) Thus, the Commission's order imposes two levels of restriction based on the results of “competent and reliable” scientific testing. First, if ECM possesses scientific evidence that ECM plastic will completely decompose within five years, then it may use the word “biodegradable” in its advertisements without any restriction whatsoever. Second, if ECM does not possess scientific evidence that ECM plastic will completely decompose within five years, but does possess scientific evidence that ECM plastic will decompose at some other rate, then it may use the word “biodegradable” only if it also includes certain disclaimers.

ECM contends that the first level of restriction—which permits ECM to represent that ECM plastic is biodegradable without disclaimers if ECM possesses scientific evidence that

ECM plastic will completely decompose within five years—actually amounts to a prohibition because “nothing biodegrades within five years in a landfill.” As ECM points out, the record shows that all of the experts in this case thought that most, if not all, waste will not biodegrade in a landfill within five years, and no expert thought that ECM plastic could achieve that rate of biodegradation. One expert, for instance, estimated that ECM plastic would take 30–100 years to biodegrade in a landfill. Thus, ECM contends, the Commission’s order effectively prohibits ECM from making “unqualified biodegradability claims”—that is, prohibits ECM from using the word “biodegradable” in its advertisements without disclaimers.

We agree with ECM’s description of the expert testimony, but disagree with ECM’s characterization of the ensuing restriction. Because ECM has not provided—and in all likelihood cannot provide—scientific evidence that ECM plastic will completely decompose within five years after customary disposal (i.e. in a landfill), the Commission’s order effectively requires that any use of the word “biodegradable” be accompanied with disclaimers. This restriction is not a prohibition on speech; it does not ban ECM from using the word “biodegradable” (or any other word) in its advertisements. Nor are the disclaimer requirements so onerous that they effectively preclude ECM from making qualified biodegradability claims. The Commission’s order permits ECM to use results from gas evolution testing—including the D5511 protocol—to substantiate qualified biodegradability claims. ECM may need to specify the disposal conditions simulated by the test; and, if the tests are not run until complete decomposition, ECM may need to specify the rate and extent of decomposition supported by the test. But such requirements do not effect a prohibition.

It is true that the Commission’s order prohibits ECM from speaking in a certain manner: it prohibits ECM from representing that ECM plastic is biodegradable without explanatory disclaimers. But disclaimer requirements *always* restrict speech in this way. Adopting ECM’s characterization of the Commission’s restrictions would render any disclaimer requirement a prohibition on speech. We decline to collapse the distinction the Supreme Court has made between these two types of restrictions. *See Zauderer*, 471 U.S. at 651 (“[I]n virtually all our commercial speech decisions to date, we have emphasized that because disclosure requirements trench much more narrowly on an advertiser’s interests than do flat prohibitions on speech,

‘warning[s] or disclaimer[s] might be appropriately required . . . in order to dissipate the possibility of consumer confusion or deception.’’’) (citation omitted).

The Commission’s disclaimer requirements are evaluated under the more lenient standard set forth in *Zauderer*. See *Int’l Dairy Foods*, 622 F.3d at 640–42. Disclaimer requirements must be “reasonably related to the [Commission’s] interest in preventing deception of consumers” and cannot be “unjustified or unduly burdensome.” *Zauderer*, 471 U.S. at 651. We have already concluded that substantial evidence supports the Commission’s finding that ECM’s unqualified biodegradability claim was misleading. In conducting this analysis, then, we are mindful that the FTC Act grants the Commission “wide discretion in determining the type of order that is necessary to cope with the unfair practices found.” *Colgate-Palmolive*, 380 U.S. at 392. Having violated the FTC Act, ECM “must expect some fencing in,” and the Commission may “frame its order broadly enough to prevent respondents from engaging in similarly illegal practices in future advertisements.” *Id.* at 395.

The Commission’s order permits ECM to represent that ECM plastic is biodegradable if accompanied by certain disclaimers. ECM’s unqualified biodegradability claim was misleading because it implied a rate of complete biodegradation not “substantiated by competent and reliable scientific evidence.” The Commission’s disclaimer requirements are reasonably related to preventing this deception. They require ECM to disclose the rate and extent of biodegradation that is actually supported by its scientific testing. And, if tests show that ECM plastic will not biodegrade in a landfill (or other customary disposal method)—as some evidence in the record indicated—ECM must disclose that information as well.

ECM argues that the deception also would be cured by the disclaimer it proposed: “There is no scientific test that establishes the rate within which this product will achieve complete biodegradation.” Because this disclaimer is less restrictive, ECM contends, the Commission’s required disclaimers are unduly burdensome.

We disagree for two reasons. First, as the Commission observed, ECM’s proposed disclaimer “offers only a vague allusion to variations in conditions and/or the imprecision of available substantiation techniques,” and “addresses neither the rate nor extent of biodegradation

that consumers perceive in ECM’s representations.” It is thus inadequate to neutralize the deception. Second, the Commission was not required to adopt the least restrictive disclaimer. *See Zauderer*, 471 U.S. at 651 n.14 (rejecting the argument that courts “should subject disclosure requirements to a strict ‘least restrictive means’ analysis under which they must be struck down if there are other means by which the State’s purposes may be served”). Because the Commission’s disclaimers are reasonably related to preventing the deception, they are constitutional under *Zauderer*—even if a less-restrictive disclaimer is up to the task.

Finally, ECM objects to the order’s disclaimer requirement related to extrapolating test results beyond the duration of the test. This restriction, however, is reasonably related to the directives of ECM’s testing protocol (D5511), which expressly instructs that “results shall not be extrapolated past the actual duration of the test.” It is therefore constitutional under *Zauderer*.

D. Due Process

ECM argues that the Commission’s order violated its due process rights. ECM contends that in its Green Guides, 16 C.F.R. § 260.8(c), and during the proceedings before the ALJ, the FTC defined “reasonably short period of time” for the purposes of the implied claim to mean “complete biodegradation within one year after customary disposal.” Thus, ECM did not know that the Commission interpreted a reasonably short period of time to mean five years, and “lacked fair notice and an opportunity to develop facts to support its defense on that point.”

“The purpose of the administrative complaint is to give the responding party notice of the charges against him.” *L. G. Balfour Co. v. F. T. C.*, 442 F.2d 1, 19 (7th Cir. 1971) (citation omitted). A complaint is adequate in this regard if the responding party is “reasonably apprised of the issues in controversy, and any such notice is adequate in the absence of a showing that a party was misled.” *Id.* (citations omitted). Additionally, an issue need not be raised in the administrative complaint if the responding party receives fair notice and a full opportunity to litigate the issue. *See N.L.R.B. v. Mackay Radio & Tel. Co.*, 304 U.S. 333, 349–50 (1938) (rejecting the argument that the agency’s “findings do not follow the pleadings” because “[w]hile the respondent was entitled to know the basis of the complaint against it, and to explain its conduct, in an effort to meet that complaint,” the record showed that it “understood the issue and

was afforded full opportunity” to litigate the issue; *Yellow Freight Sys., Inc. v. Martin*, 954 F.2d 353, 358 (6th Cir. 1992) (concluding that an agency may base its decision on an issue “not raised in pleadings” if the responding party “knew what conduct was in issue and had an opportunity to present [its] defense”); *see also Nat'l Realty & Const. Co. v. Occupational Safety & Health Review Comm'n*, 489 F.2d 1257, 1264 (D.C. Cir. 1973) (“So long as fair notice is afforded, an issue litigated at an administrative hearing may be decided by the hearing agency even though the formal pleadings did not squarely raise the issue.”).

The complaint here provided ECM with adequate notice to prepare a defense. It alleged that ECM’s various biodegradability claims were false and misleading, and it identified specific marketing materials containing these claims. It also informed ECM of the main issues in dispute: the scientific validity of the claims; the rate of biodegradation of ECM plastics after customary disposal; and whether consumers “interpret unqualified degradable claims to mean that the entire product or package will completely decompose into elements found in nature within a reasonably short period of time after customary disposal.” Although the complaint does not define “reasonably short period of time” as a specific time period, that level of detail was unnecessary to “reasonably apprise” ECM of the issues in controversy. *See L. G. Balfour Co.*, 442 F.2d at 19.

Moreover, ECM did, in fact, have ample notice of complaint counsel’s intent to use “within five years” as a benchmark for “reasonably short period of time.” Before, during, and after trial, complaint counsel defined “reasonably short period of time” as “a period close to one year, or at least within 5 years.” We have previously held such elaboration over the course of the proceedings sufficient to provide notice. *See J. B. Williams Co. v. F. T. C.*, 381 F.2d 884, 888 (6th Cir. 1967) (holding that petitioner had sufficient notice of an issue even though the “specific issue was not charged in the complaint, and Government counsel stated early in the proceeding that this issue was not present”); *see also L. G. Balfour Co.*, 442 F.2d at 19 (concluding that petitioner had adequate notice because “[a]s the Commission case against petitioners unfolded, there was a reasonable opportunity to know the claims of the opposing party and to meet them” (internal quotation marks omitted)). ECM’s due process claim is thus without merit.

The D.C. Circuit’s “fair notice” doctrine, relied upon by ECM, is not to the contrary. This doctrine restricts the penalties agencies may impose when their regulatory interpretations have not been announced with sufficient clarity. *See Gen. Elec. Co. v. U.S.E.P.A.*, 53 F.3d 1324, 1329 (D.C. Cir. 1995); *see also Gates & Fox Co. v. Occupational Safety & Health Review Comm’n*, 790 F.2d 154, 156–57 (D.C. Cir. 1986). However, this heightened notice standard only applies when agencies seek to impose “sufficiently grave” or “drastic” sanctions. *See United States v. Chrysler Corp.*, 158 F.3d 1350, 1355 (D.C. Cir. 1998) (citation omitted); *Gen. Elec. Co.*, 53 F.3d at 1329. Examples of grave or drastic sanctions include denying the renewal of an operating license, *Trinity Broad. of Fla., Inc. v. F.C.C.*, 211 F.3d 618, 628–32 (D.C. Cir. 2000), compelling a product recall, *Chrysler Corp.*, 158 F.3d at 1354–55, and imposing a \$25,000 fine, *Gen. Elec. Co.*, 53 F.3d at 1329–30. Here, by contrast, the Commission merely ordered ECM to cease making certain representations that violate its interpretation of the FTC Act. This is not a “grave” or “drastic” sanction. *See id.* at 1328 (“Had [the] EPA merely required GE to comply with its interpretation, this case would be over.”).⁸ And, in any event, ECM received adequate notice of the charges.

III. CONCLUSION

For the foregoing reasons, we **DENY** the petition for review.

⁸Because the D.C. Circuit’s “fair notice” doctrine would not change the outcome in this case, we decline to decide whether it should be adopted in this circuit.