

**UNITED STATES OF AMERICA  
BEFORE THE FEDERAL TRADE COMMISSION**

**COMMISSIONERS:**       **Edith Ramirez, Chairwoman  
Julie Brill  
Maureen K. Ohlhausen  
Terrell McSweeney**

**In the Matter of**

**ECM BioFilms, Inc.,  
a corporation, also d/b/a/  
Envioplastics International**

**DOCKET NO. 9358  
REDACTED PUBLIC VERSION**

**OPINION OF THE COMMISSION**

By Commissioner Terrell McSweeney, for the Commission.

This is a deceptive marketing case in which the Commission has alleged that Respondent ECM BioFilms, Inc. (“ECM”) made false, misleading, and unsubstantiated environmental claims about its product, a plastics additive called “MasterBatch Pellets.” The scientific community widely recognizes that conventional plastic products are biodegradable only over a very long period of time. However, for many years ECM made a number of biodegradability claims for its additive, including that plastics treated with the additive (“ECM Plastics”) would: biodegrade; biodegrade in some period greater than a year; and completely biodegrade in a landfill within a period of nine months to five years. It also represented that accepted scientific tests supported its claims.

Complaint Counsel asserted that the unqualified representation that ECM Plastics will biodegrade and the representation that they will biodegrade in some period greater than a year both convey an implied claim that the products will completely biodegrade in a landfill within a reasonably short period of time, or one year to five years.

In his Initial Decision, Administrative Law Judge D. Michael Chappell found agreement among all of the scientific experts in the case that ECM Plastics do not fully biodegrade within five years in a landfill, and therefore held that ECM’s express claims of biodegradation within nine months to five years were false, misleading, and material, in violation of Section 5 of the FTC Act. However, the ALJ found that Complaint Counsel had failed to prove that ECM’s representations that ECM Plastics are “biodegradable” and “biodegradable in some period greater than a year” imply that ECM Plastics will completely biodegrade in a landfill within one year. He did not address whether ECM’s representations imply that ECM Plastics will biodegrade in a reasonably short period of time or within five years.

We affirm the ALJ's decision with respect to ECM's express claim of biodegradation in nine months to five years. However, based on our own *de novo* examination of the evidence, we find that ECM also made implied claims that ECM Plastics will biodegrade in a reasonably short period of time, or within five years, and the implied claims are false, unsubstantiated, and material.<sup>1</sup> The Order we enter prohibits ECM from making such claims in the future without adequate scientific substantiation.

## I. Factual Background

ECM is a small Ohio-based corporation that was started in 1998 by Patrick Riley to manufacture and sell a plastics additive he had developed which, he claimed, would render plastics made with the additive "biodegradable" in nine months to five years. IDF 152; Sinclair, Tr. 747-48, 754-55.<sup>2</sup> The formula for the additive (the "ECM Additive") is a trade secret and has never been patented. IDF 160. ECM licenses the technology from Micro-Tech Research, Inc., a predecessor corporation also established by Mr. Riley. IDF 153. The ECM Additive, which ECM markets as "MasterBatch Pellets," is the only product ECM sells. IDF 156-58; 163.

In 2000 ECM hired a local lawyer, Robert Sinclair, as CEO and President. IDF 84-85; Sinclair, Tr. 745-46, 757. Mr. Sinclair had previously invested in Micro-Tech and provided legal advice to it on a possible spin-off of certain assets including the ECM Additive technology. Sinclair, Tr. 745-46; 756-57; CCX-818 (Sinclair Dep.) at 71-73. From 2000 on, Mr. Sinclair has acted as ECM's CEO and President, directing all of ECM's business operations, including the marketing and sales of the ECM Additive to customers, and determining its advertising claims. IDF 85; CCX- 818 (Sinclair Dep.) at 75-76, 194. Although Mr. Sinclair is not a scientist, he

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<sup>1</sup> Commissioner Ohlhausen dissents from this opinion to the extent it holds that Complaint Counsel provided evidence sufficient to prove that ECM's unqualified biodegradability claim conveyed to consumers that ECM Plastics will completely biodegrade within a landfill within a reasonably short period of time. *See* Partial Dissent of Commissioner Maureen K. Ohlhausen.

<sup>2</sup> This opinion uses the following abbreviations for citations to the record:  
Comp.: Complaint

Answer: Answer and Affirmative Defenses of Respondent ECM BioFilms, Inc.

ID: Initial Decision of the Administrative Law Judge

IDF: Numbered Findings of Fact in the ALJ's Initial Decision

Tr.: Transcript of Trial before the ALJ

Tr. Oral Arg.: Transcript of Oral Argument before the Commission

CCX: Complaint Counsel's Exhibit

CCAppB: Complaint Counsel's Appeal Brief

CCAnsB: Complaint Counsel's Answering Brief

CCSuppB: Complaint Counsel's Amended Supplemental Brief Responding to Issues Raised by the Commission

CCSuppRB: Complaint Counsel's Response to ECM's Supplemental Brief

RX: Respondent's Exhibit

RAppB: Respondent ECM BioFilms' Brief on Appeal from the Initial Decision of Chief ALJ D. Michael Chappell

RAnsB: Respondent ECM BioFilms' Brief in Answer to Complaint Counsel's Appeal

RRB: Respondent ECM BioFilm's Brief in Reply to Complaint Counsel's Answering Brief

RSuppB: Respondent's Supplemental Brief

RSuppRB: ECM's Response to Complaint Counsel's Supplemental Brief

took some science courses in college and at one point taught science at the high school level. IDF 87.

The key selling point for the ECM Additive is that it is seen as helpful to the environment because it purportedly hastens the biodegradation of plastics. *See* IDF 200-01, 205, 1497, 1500, 1503, 1534; Sinclair, Tr. 767-68, 777-75; CCX-819 (Sinclair Dep.) at 321, 324. Since about 2002, ECM has issued a “Certificate of Biodegradability” to its customers attesting to the rate and extent of the biodegradability of ECM Plastics based on scientific testing. IDF 266-70. The 2007 version of the Certificate states, in part,

This is to certify that numerous plastic samples, submitted by ECM BioFilms, Inc., have been tested by independent laboratories in accordance with standard test methods approved by ASTM, ISO and other such standardization bodies to determine the rate and extent of biodegradation of plastic materials.

IDF 269; CCX-1.

ECM’s primary marketing tool is its website. ID 207. Potential customers often contact ECM through the website, and then ECM’s sales manager, Tom Nealis, follows up and provides additional sales literature and other basic information. ID 211-14. Mr. Sinclair also answers potential customers’ questions as part of the sales process. IDF 214, 222.

The description of ECM Plastic’s “biodegradable” attribute in its sales process has varied somewhat over time.<sup>3</sup> Sinclair, Tr. 1609. Initially ECM stated that ECM Plastics were biodegradable without referencing any particular time frame in which complete biodegradation would occur. However, as customers began asking about the rate of biodegradation, ECM added more specific claims, representing that ECM Plastics would “completely” biodegrade “in a landfill” in “9 months to five years.” Sinclair, Tr. 1609, 1613 (time period just “crept in” as “in the market . . . people were interested in having some idea of a time period”). This “nine months to five years” claim then became ECM’s standard claim in its marketing materials and other sales communications, including representations that the rate was established through scientific testing. IDF 245, 265, CCX-5, CCX-6.<sup>4</sup>

ECM primarily relied upon the American Society for Testing and Materials (“ASTM”) D5511 test to prove to potential customers that ECM Plastics would biodegrade in nine months to five years. The ASTM D5511 protocol is an “accelerated” test designed to measure the

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<sup>3</sup> Examples of ECM’s marketing materials containing the unqualified “biodegradable” claim, the “nine months to five years” claim, and the “some period greater than a year” claim are set out in Appendix A to this opinion. The Appendix also includes examples of the express “nine months to five years” claim and the unqualified “biodegradable” claim (in the form of the “ECM Biodegradable” tree logo) that appeared on finished products that would have been seen by end-users.

<sup>4</sup> The record is not clear as to precisely when ECM began making the nine months to five years claim. *Compare* CCX-818 (Sinclair Dep.) at 175 (testifying that ECM began conveying the nine months to five years claim in 2009 or 2010) *with* CCX-10 (January 17, 2007 ECM Reprint of a Letter to an Interested Party representing that ECM Plastics will “fully biodegrade . . . buried in landfills” and will “completely biodegrade in a period of from 9 months to 5 years or less”).

intrinsic biodegradability of a product under certain laboratory conditions in a much shorter time frame compared to what would occur in nature. *See* IDF 717-31. ASTM specifically forbids the test to be used to market as ECM did. The test protocol states: “Claims of performance shall . . . not be used for unqualified ‘biodegradable’ claims.” CCX-84 at 1 (ASTM D5511 § 1.4). “Furthermore,” the protocol continues, “results shall not be extrapolated past the actual duration of the test.” *Id.* As a member of several ASTM committees on plastics and environmental issues, Mr. Sinclair was presumably aware of this marketing prohibition. IDF 88; Sinclair, Tr. 778-80.

In October 2012, the Commission revised the FTC Guides for the Use of Environmental Marketing Claims (“Green Guides”) to clarify that a reasonably short period for biodegradation implicated by an unqualified claim of biodegradability is biodegradation to completion within one year and that an unqualified biodegradability claim therefore requires substantiation of that fact.<sup>5</sup> The current version of the Green Guides advises that “[d]egradable claims should be qualified clearly and prominently to the extent necessary to avoid deception about: (1) [t]he product’s or package’s ability to degrade in the environment where it is customarily disposed; and (2) [t]he rate and extent of degradation.” 16 C.F.R. § 260.8(d).

Following the issuance of the updated Green Guides, ECM revised its marketing materials and logo. It placed an asterisk next to the word “biodegradable” and provided the following text: “Plastic products manufactured with [the ECM Additive] will biodegrade in any biologically-active environment (including most landfills) in some period greater than a year.” IDF 251-54; 256; *see also* IDF 270 (describing similar changes to ECM’s Certificate of Biodegradability). It added the following explanation to its website:

The basic concept is that biodegradation is a natural process that occurs around the world but at various speeds due to various conditions. Plastics with our additives behave like sticks, branches or trunks of trees. Due to this fact, we do not guarantee any particular time because the time depends on the same factors that the biodegradation of woods and most other organic materials on earth depend – ambient biota and other environmental conditions. Under specific composting conditions with additional accelerants sprayed on them, some customers have reported biodegradation in as little as a couple of months.

RX-681 at 61. However, ECM did not remove the “nine months to five years” claim from its website until the end of 2013 – more than a year later – and it also continued to disseminate some sales brochures containing the “9 months to 5 years” claim during that period. IDF 259. In communications with potential and existing customers, ECM continued to define the “window of biodegradation” as nine months to five years through January 2014, several months after this adjudicative proceeding commenced. *See, e.g.*, CCX-280 (Mr. Sinclair stated in a letter to a

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<sup>5</sup> The Green Guides help marketers avoid making environmental marketing claims that are unfair or deceptive under Section 5 of the FTC Act, 15 U.S.C. § 45. They do not confer any rights on any person and do not operate to bind the FTC or the public. The Commission, however, can take action under the FTC Act if a marketer makes an environmental claim inconsistent with the Guides. In any such enforcement action, the Commission must prove that the challenged act or practice is unfair or deceptive in violation of Section 5 of the FTC Act. 16 CFR § 260.1(a).

customer in January 2013 that the “window of biodegradation” was “9 months to 5 years”); CCX-281 (In April 2013, a customer asked about the “time span” for the decomposition progress and Mr. Nealis told him nine months to five years); CCX-282 (when asked in October 2013 if the rate of degradation varies depending on the type of soil, Mr. Nealis stated “Yes.... This is why we state the biodegradation will take place in a period of 9 months to five years.”); CCX-259-259A (Mr. Nealis made the “9 months to 5 years” rate claim to a customer on January 8, 2014).

ECM sells the ECM Additive directly and through distributors to companies that manufacture plastics (or to companies that have plastics manufactured for them). IDF 164-70. ECM does not sell directly to consumers, although its website is available to the general public and end-use consumers see the “ECM Biodegradable” tree logo and other biodegradability claims on plastic items made with the ECM Additive. IDF 164, 285-86, 289-304. ECM routinely provides its customers with its marketing materials and encourages them to pass along those materials (and hence ECM’s biodegradability claims) to their own customers. IDF 280. Some of those customers in turn have included the claims, including the specific “nine months to five years” language, and/or the “ECM Biodegradable” tree logo on items provided to end-use consumers, such as plastic bags. IDF 285-86, 289-90, 293-305; CCX-819 (Sinclair Dep.) at 415 (describing inclusion of ECM logo on grocery bags as “gorgeous” advertising). Among the plastic products manufactured with the ECM Additive and bearing ECM’s biodegradable claims are plastic dinnerware, straws, “clam shell” carry-out containers, restaurant and grocery bags, trash bags, plastic film, and shampoo and conditioner bottles. IDF 285-86.

## **II. Procedural Background**

### **A. The Complaint**

On October 18, 2013, the Commission issued a Complaint alleging that ECM’s biodegradability claims were false and unsubstantiated. Specifically, the Complaint alleges that ECM, through various marketing and promotional materials, “has represented, expressly or by implication, that:

- A. ECM Plastics are biodegradable, *i.e.*, will completely break down and decompose into elements found in nature within a reasonably short period of time after customary disposal;
- B. ECM Plastics are biodegradable in a landfill;
- C. ECM Plastics are biodegradable in a stated qualified timeframe; and
- D. ECM Plastics have been shown to be biodegradable, biodegradable in a landfill, or biodegradable in a stated qualified timeframe under various scientific tests including, but not limited to, ASTM D5511.”

Comp. ¶ 9. The Complaint further alleges that “[i]n truth and in fact:

A. ECM Plastics will not completely break down and decompose into elements found in nature within a reasonably short period of time after customary disposal;

B. ECM Plastics will not completely break down and decompose into elements found in nature within a reasonably short period of time after disposal in a landfill;

C. ECM Plastics will not completely break down and decompose into elements found in nature within respondent's stated qualified timeframes after customary disposal; and

D. ECM Plastics have not been shown to completely break down and decompose into elements found in nature within a reasonably short period of time after customary disposal, after disposal in a landfill, or within respondent's stated qualified timeframe, under various scientific tests, including, but not limited to, ASTM D5511."

*Id.* ¶ 10. Accordingly, the Complaint alleges that ECM's representations were false and misleading. *Id.* ¶ 11.

The Complaint also charges that the representations were misleading because, at the time they were made, Respondent lacked reasonable substantiation for its representations. *Id.* ¶¶ 12-13. Furthermore, the Complaint alleges, ECM distributed the false and misleading representations through its marketing and promotional materials to its customers to use with their own customers, thereby providing those entities with the "means and instrumentalities" to deceive. *Id.* ¶ 14.

Complaint Counsel's proposed order would prohibit ECM from making any unqualified representation that any product or package is "degradable" unless ECM can substantiate with competent and reliable scientific evidence that its product or package will decompose completely in a landfill within one year. Likewise, the proposed order prohibits any "qualified" claim as to the rate and extent of biodegradation unless the claim is substantiated by such evidence. Notice Order ¶ I.

## **B. The Initial Decision**

The administrative hearing began on August 5, 2014 and concluded on August 29, 2014. On January 28, 2015, ALJ D. Michael Chappell issued an Initial Decision in which he found that ECM had claimed that ECM Plastics would fully biodegrade in a landfill within nine months to five years, and further claimed that tests proved that they would do so. ID 6, 177; IDF 265. He determined that these claims were false and unsubstantiated. ID 245-46. In addition, he found that these claims "pertained to the central characteristics of plastics infused with the ECM Additive" and were material to the purchasing decisions of ECM customers and downstream customers. IDF 1497, 1500. He also rejected ECM's argument that its customers were sophisticated purchasers who did not necessarily believe the claims, as not supported by the evidence. ID 290-91. The ALJ concluded that by making these claims, ECM made deceptive

representations and that it also provided the means for its customers and others in the supply chain to themselves engage in deception in violation of Section 5 of the FTC Act. ID 291-94, 319.

Judge Chappell found, however, that Complaint Counsel had not proven that ECM made what he refers to as an “implied one year claim” – *i.e.*, that Complaint Counsel had not proven that ECM’s claims that ECM Plastics are “biodegradable” and biodegradable “in some period greater than a year” implied that they would completely biodegrade into elements found in nature in a landfill within a one-year period. ID 220-23. He concluded that “ECM’s revised stated time period of ‘some period greater than a year,’ on its face, is clearly and directly contrary to any message that complete biodegradation would occur ‘within one year.’” ID 182. He reasoned that “[t]he plain meaning of the word ‘biodegradable’ [as defined in the dictionary] does not include any particular time frame for complete decomposition, much less complete decomposition, into elements found in nature, in a landfill, within one year.” ID 184. He also found the three consumer surveys offered by Complaint Counsel to show that a significant minority of reasonable consumers interpret “biodegradable” to mean complete decomposition within one year – a survey conducted by Complaint Counsel’s expert, Dr. Frederick, a survey previously commissioned by the American Plastics Council (“APCO”), and a survey conducted by Synovate – were methodologically flawed and hence entitled to little evidentiary weight. ID 187-213.

By contrast, the ALJ found that the consumer survey conducted by ECM’s expert, Dr. Stewart, was methodologically sound and showed that consumers interpret the term “biodegradable” as a process of decomposition and understand that it depends on the type of material involved. ID 216-17. He rejected Complaint Counsel’s contentions that ECM’s consumer survey results are fully consistent with the results of the other three surveys in showing that consumers believe that products labeled “biodegradable” will biodegrade within one year and that the similarity of results of all four studies, or their “convergent validity,” underscores the basic validity and reliability of the survey results. ID 208-16. He therefore concluded that Complaint Counsel had failed to show by a preponderance of the evidence that a significant minority of reasonable consumers would interpret ECM’s unqualified “biodegradability” claim or its qualified “some period greater than a year” claim to encompass an implied claim that ECM Plastics completely biodegrade in a landfill within one year. ID 181.

Having found ECM liable only for its claim that ECM Plastics will fully biodegrade in a landfill within nine months to five years and the related establishment claim (*i.e.*, the claim that scientific tests prove such biodegradation within nine months to five years), the ALJ recommended an order that prohibits ECM from representing that any product or package will completely biodegrade within any time period, or that tests prove such representation, unless the representation is true, not misleading, and, at the time made, substantiated by competent and reliable scientific evidence. ID 320-21.

### **C. The Cross-Appeals**

ECM appeals the ALJ’s finding of liability as to its express nine months to five years rate claim, arguing it was not material, RAppB 18-39, and urges us to affirm the ALJ’s decision on the remaining claims. *Id.* at 6-7. It also argues that application to ECM of what it terms the

Green Guides’ “One Year Rule” would constitute *ultra vires* agency action (*id.* at 43-44); that certain discovery and evidentiary rulings by the ALJ violated its due process rights (*id.* at 44-51); and that the order issued by the ALJ is not in the public interest because no actual consumer injury has been shown. *Id.* at 39-43.

Complaint Counsel appeal the ALJ’s rulings on the implied rate claim that ECM Plastics will completely biodegrade in a landfill in a reasonably short period of time, *i.e.*, one or five years, and that scientific testing proves this. CCApB 6-30. They also appeal his conclusion that they had not proven either the falsity or lack of adequate substantiation as to ECM’s implied biodegradability claims. *Id.* at 30-47. Further, they defend their proposed order as appropriate and necessary. *Id.* at 5-6, 47-54.

With respect to the implied non-establishment rate claim, Complaint Counsel contend that the four consumer surveys in the record – including one conducted by ECM’s own expert – show that a significant minority of reasonable consumers believe that products claimed to be “biodegradable” will completely biodegrade within a reasonably short period of time and specifically that some consumers believe that period to be within one year and an even larger number of consumers believe it to be within five years. CCApB 6-27; Tr. Oral Arg. 62-63. Complaint Counsel also point to survey evidence showing that consumers interpret ECM’s “some period greater than a year claim” as implying that ECM Plastics will decompose within a reasonably short period of time; they contend that that result is consistent with what consumer survey experts refer to as the “anchoring” effect, the tendency of consumer estimates to cluster around a provided reference point, such as ECM’s “a year.” CCApB 27-29. With respect to the issues of falsity and substantiation, Complaint Counsel maintain that none of the scientific experts found that ECM Plastics will biodegrade in a reasonably short period of time. They argue that the laboratory tests relied upon by ECM are unreliable, and that ECM has failed to present any substantiation that would be accepted by the relevant scientific community. *Id.* at 42-47.<sup>6</sup>

### III. Analysis

The Commission reviews the record *de novo* by considering “such parts of the record as are cited or as may be necessary to resolve the issues presented” and exercising “all the powers which it could have exercised if it had made the initial decision.” 16 C.F.R. § 3.54. ECM does not dispute that the Commission has jurisdiction over the conduct at issue.<sup>7</sup>

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<sup>6</sup> In addition, the organization Californians Against Waste has moved for leave to file an *amicus curiae* brief in support of Complaint Counsel. That motion is granted because the public interest will benefit from the Commission’s consideration of the brief. Of course, the *amicus* brief does not establish any fact of record, *see Union Oil Co. of Ca.*, 138 F.T.C. 1, 72 (2004), and we have not relied on any facts drawn from exhibits appended to the brief. Nor have we relied upon the brief’s reference to CX-28, which was admitted to the record only for limited purposes. Tr. 1634-36; *see also* Tr. 1617-19. In fact, no portion of our decision rests on facts or arguments presented in the *amicus* brief.

<sup>7</sup> Section 5 of the Federal Trade Commission Act grants the Commission authority to prevent “unfair or deceptive acts or practices in or affecting commerce” by “persons, partnerships, or corporations.” 15 U.S.C. § 45(a)(1)-(2). ECM is an Ohio corporation, Answer ¶ 1, over which the FTC has jurisdiction. Its principal office or place of business is in Ohio. *Id.* ECM is in the business of manufacturing, advertising, selling, and distributing the ECM



Section 5 of the FTC Act prohibits “unfair or deceptive acts or practices.” An advertisement is deceptive if it contains a representation or omission of fact that is likely to mislead a consumer acting reasonably under the circumstances, and that representation or omission is material to the consumer’s purchasing decision or conduct. *See Policy Statement on Deception*, 103 F.T.C. 174, 175 (1984) (appended to *Cliffdale Assocs., Inc.*, 103 F.T.C. 110 (1984)) (“*Deception Statement*”); *Kraft, Inc.*, 114 F.T.C. 40, 120 (1991), *aff’d*, 970 F.2d 311 (7th Cir. 1992). Thus, in determining whether an advertisement is deceptive, we conduct 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 v. F.T.C.*, 777 F.3d 478, 490 (D.C. Cir. 2015).

This case involves both express and implied claims. ECM does not dispute that it expressly represented that ECM Plastics are “biodegradable” and “biodegradable in a landfill,” and that scientific testing proved those claims. Nor does it dispute that it expressly represented that ECM Plastics “completely” biodegrade “in a landfill” “within nine months to five years,” and that scientific tests also established<sup>8</sup> that claim.<sup>9</sup> Likewise, ECM does not dispute that it made the claim that ECM Plastics will biodegrade “in some period greater than a year” and that scientific tests proved that claim.

The first set of issues we must resolve are: (i) whether ECM’s unqualified representation of biodegradability implies a claim that ECM Plastics will completely biodegrade in a landfill within a reasonably short period of time; and (ii) whether ECM’s representation that ECM Plastics will biodegrade “in some period greater than a year” likewise implies complete biodegradation in a landfill within a “reasonably short period of time.” *See* Complaint ¶ 9.A; CCApB 6.

ECM vigorously disputes that a claim that ECM Plastics are “biodegradable” implies the products will biodegrade “within a reasonably short period of time.” It argues that its representations regarding “biodegradability” mean only that ECM Plastics are “intrinsically” biodegradable, without implicating any reference to time. As discussed above, the ALJ found that Complaint Counsel failed to establish that the implied rate claim was conveyed from representations of “biodegradability” or biodegradability “in some period greater than a year,” and thus found it unnecessary to consider the claim’s alleged falsity or materiality. However, we find that both the unqualified representation of biodegradability and the representation that ECM

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Additive to plastic manufacturers and distributors of plastics, Answer ¶ 2, located in various states across the United States. *See* IDF 4, 9, 23, 37, 53, 64, 78. Consequently, ECM’s acts and practices, as alleged in the Complaint, are and have been “in or affecting commerce,” within the meaning of Sections 4 and 5 of the FTC Act.

<sup>8</sup> *See infra* section III.B (explaining that establishment claims represent that a certain level of evidence establishes the performance or efficacy of a product).

<sup>9</sup> The ALJ found that ECM’s claim that tests prove that ECM Plastics will fully biodegrade in a landfill within nine months to five years, while not expressly stated, is “clear and conspicuous based on the overall net impression of the marketing materials upon which the claim appeared.” IDF 1499; *see also* IDF 265; ID 223. ECM has not appealed this finding. We adopt the ALJ’s rulings concerning ECM’s claim that tests establish the ECM Additive’s efficacy.

Plastics biodegrade “in some period greater than a year” imply that ECM Plastics completely biodegrade in landfills within a reasonably short period of time (*i.e.*, within five years).<sup>10</sup>

The next set of issues we must resolve relate to the allegation that the express and implied claims were false and unsubstantiated. ECM has not appealed the ALJ’s ruling that its “nine months to five years” express biodegradation claim and associated establishment claim were both false and unsubstantiated. However, it contends that its representations that ECM Plastics are “biodegradable” and “biodegradable in a landfill” (considered without regard to any implied time frame) are true and adequately substantiated by scientific testing, in particular the ASTM D5511 gas emission testing. Similarly, it maintains that its claim that ECM Plastics biodegrade “in some period greater than a year” is true and adequately substantiated. For the reasons discussed below, we find that ECM lacks a reasonable basis for its implied biodegradable rate claims and that those claims were false and unsubstantiated.

The last liability issues we examine relate to materiality and the public interest. ECM contends that its “nine months to five years” claim was not material, and that the ALJ’s proposed order, which was based only on that claim, was therefore not in the public interest. RAppB 51. For the reasons discussed below, we affirm the ALJ’s ruling with respect to the materiality of ECM’s “nine months to five years” claim and its related establishment claim; we find ECM’s implied rate claim and its related establishment claim material; and we reject ECM’s contention that an order is not in the public interest.

#### **A. The Implied Rate Claim**

In the course of its marketing to direct customers, ECM made a series of claims about the biodegradability of ECM Plastics. First, it made claims of biodegradability without reference to any specific period of time; then it switched to claims that promised biodegradation in a specific time frame of nine months to five years; and eventually it represented that ECM Plastics would biodegrade in “some period greater than a year.” End-use consumers who encountered plastic products made with the ECM Additive were also exposed to unqualified biodegradation claims and to express claims of biodegradation within nine months to five years. IDF 285-86, 297. Complaint Counsel contend that “Respondent’s ‘biodegradable’ claim and ‘some period greater than a year’ claim implied to reasonable consumers that plastic treated with its additive would completely break down into elements found in nature in a landfill in a reasonably short period of time (*i.e.*, within one or five years).” CCApB 6.

#### **1. The Legal Framework**

The Commission’s framework for interpreting advertising claims is well settled and is not in dispute. 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, LLC*, 2013 WL 268926, at \*19 (F.T.C. 2013), *aff’d*, *POM Wonderful LLC v. FTC*, 777 F.3d 478 (D.C. Cir. 2015); *Thompson Med. Co.*, 104 F.T.C. 648, 788 (1984), *aff’d*,

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<sup>10</sup> Commissioner Ohlhausen dissents from this conclusion with regard to the unqualified biodegradable claim. See *supra* note 1.

791 F.2d 189 (D.C. Cir. 1986); *Deception Statement*, 103 F.T.C. at 176. When an ad conveys more than one meaning, only one of which is misleading, a seller is liable for the misleading interpretation even if non-misleading interpretations are also possible. *POM Wonderful*, 2013 WL 268926, at \*19 (citing *Bristol-Myers Co.*, 102 F.T.C. 21, 320 (1983), *aff'd*, 738 F.2d 554 (2d Cir. 1984)); *Nat'l Comm'n on Egg Nutrition v. FTC*, 570 F.2d 157, 161 n.4 (7th Cir. 1977).

An interpretation may be reasonable even if it is not shared by a majority of consumers in the relevant class or by particularly sophisticated consumers. *See, e.g., Novartis Corp.*, 127 F.T.C. 580, 684 (1999); *Kraft*, 114 F.T.C. at 122. “An ad is misleading if at least a significant minority of reasonable consumers are likely to take away the misleading claim.” *Telebrands*, 140 F.T.C. 278, 291 (2005), *aff'd*, 457 F.3d 354 (4th Cir. 2006)); *see Kraft*, 114 F.T.C. at 122; *Deception Statement*, 103 F.T.C. at 177 n.20.<sup>11</sup> In prior cases, we have found percentages ranging from 10% to 22% to be sufficient to constitute a significant minority.<sup>12</sup> *See, e.g., Firestone Tire & Rubber Co. v. FTC*, 481 F.2d 246, 249 (6th Cir. 1973); *Telebrands*, 140 F.T.C. at 325.

Claims may be express or implied. Express claims directly state the representation at issue; implied claims are those that are not express. *Kraft*, 114 F.T.C. at 120. The Commission reviews implied claims as if they are on a continuum, ranging from claims that are “virtually synonymous with an express claim through language that literally says one thing but strongly suggests another to language which relatively few consumers would interpret as making a particular representation.” *Id.*; *see also Thompson Med. Co.*, 104 F.T.C. at 789; *Novartis Corp.*, 127 F.T.C. at 680. Both express claims and implied claims can be deceptive. *Kraft*, 114 F.T.C. at 120 (citing, *e.g., Removatron Int'l Corp.*, 111 F.T.C. 206, 292-95 (1988), *aff'd*, 884 F.2d 1489 (1st Cir. 1989)).

“It is well established that the Commission has the common sense and expertise to determine ‘what claims, including implied ones, are conveyed in a challenged advertisement, so long as those claims are reasonably clear.’” *POM Wonderful*, 2013 WL 268926, at \*20-21 (quoting *Kraft, Inc.*, 970 F.2d at 319-20); *see FTC v. Colgate-Palmolive Co.*, 380 U.S. 374, 391-92 (1965); *Stouffer Foods Corp.*, 118 F.T.C. at 798; *Daniel Chapter One*, 2009 WL 516000, at \*14-15 (F.T.C. 2009), *aff'd*, 405 Fed. Appx. 505 (D.C. Cir. 2010 (unpublished opinion), available at 2011-1 Trade Cas. (CCH) ¶77,443 (D.C. Cir. 2010).

However, if after completing a facial analysis we cannot conclude with confidence that an advertisement can reasonably be read to contain a particular implied message, the Commission requires extrinsic evidence to determine how reasonable consumers actually perceive the ads. *See, e.g., Kraft*, 114 F.T.C. at 121; *Thompson Med. Co.*, 104 F.T.C. at 789-90.

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<sup>11</sup> While in her Partial Dissent Commissioner Ohlhausen characterizes reliance on the inferences drawn by a significant minority of reasonable consumers as an “exception” to a more rigorous rule, Partial Dissent at 8, the Commission’s Deception Statement presents that approach directly and affirmatively: “A material practice that misleads a significant minority of reasonable consumers is deceptive.” *Deception Statement*, 103 F.T.C. at 177 n.20.

<sup>12</sup> Commissioner Ohlhausen dissents from this characterization of the case law. She argues in her partial dissent that the FTC has never found a claim interpretation to be reasonable solely based on evidence that a significant minority of consumers adopt that interpretation. The dissent does not find the cases the majority cites apposite.

Such extrinsic evidence may include the results of consumer surveys, expert opinion as to how the ad may be interpreted by consumers, and generally accepted principles drawn from market research. *See, e.g., Kraft*, 114 F.T.C. at 121. Traditionally, we have found that consumer surveys – particularly experimental surveys, if properly designed and conducted – are especially informative in assessing the actual impact of an ad on consumer perceptions. *See, e.g., Kraft*, 970 F.2d at 318; *Telebrands*, 140 F.T.C. at 315-29; *Stouffer Foods Corp.*, 118 F.T.C. 746, 804-11; (1994) *Thompson Med. Co.*, 104 F.T.C. at 788-89 (“The extrinsic evidence we prefer to use and which we give great weight is direct evidence of what consumers actually thought upon reading the advertisement in question. Such evidence will be in the form of consumer survey research. . . .”). Further, in considering consumer survey evidence, we assess the methodologies used and any asserted shortcomings in such methodologies, but we recognize that there are typically flaws in any survey. We do not demand perfection. *See POM Wonderful*, 2013 WL 268926, at \*28 (“The Commission does not require methodological perfection . . . but looks to whether such evidence is reasonably reliable and probative.”).

Also, while a respondent need not intend to make a claim in order to be held liable, a showing of intent to make a particular claim is “powerful evidence that the alleged claim in fact was conveyed to consumers.” *Telebrands*, 140 F.T.C. at 304; *see also POM Wonderful*, 2013 WL 268926, at \*29 (statements by respondents that were never conveyed to consumers showed an intent to convey particular types of claims, which supported the Commission’s interpretation of respondents’ ads); *Novartis Corp.*, 127 F.T.C. at 683 (“evidence of intent to make a claim may support a finding that the claims were indeed made”).

## 2. ECM’s Unqualified “Biodegradability” Representation

First, we consider Complaint Counsel’s allegation that the representation that ECM Plastics are “biodegradable” conveys to reasonable consumers the claim that ECM Plastics “will completely break down and decompose into elements found in nature within a reasonably short period of time after customary disposal.” Comp. ¶ 9.A.

From the time that ECM first began marketing the ECM Additive in the late 1990s until about 2009, ECM told its customers that the ECM Additive would render conventional plastics “biodegradable” without reference to any specific time frame.<sup>13</sup> CCX-818 (Sinclair Dep.) at 75-78. Also, finished products made with ECM Plastics purchased by end-users have included claims – that originated with ECM – that the products were “biodegradable” without reference to time, including the “ECM Biodegradable” tree logo. IDF 285.

ECM does not dispute that it has expressly represented that ECM Plastics are “biodegradable,” “biodegradable in a landfill,” and “fully biodegrade,” and that tests prove these assertions. Rather, the issue is whether a significant minority of reasonable consumers would

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<sup>13</sup> To the extent that over a prolonged course of dealing, any ECM customers were exposed to both an earlier unqualified biodegradability claim and a later specific claim of biodegradation within nine months to five years, we conclude that the net impression conveyed to such customers would be the more specific claim communicating the time frame of five years or less. *See Deception Statement*, 103 F.T.C. at 179 (“the Commission will evaluate the entire advertisement, transaction, or course of dealing in determining how reasonable consumers are likely to respond.”).

likely interpret those representations to imply biodegradation “within a reasonably short period of time.”

The ALJ interpreted “reasonably short period of time” to mean “within one year,” *see* ID 180-81 & n.23, and found that the marketing materials and extrinsic evidence failed to establish an “implied one year rate claim.” ID 182.

At the outset, we reject ECM’s argument that the only implied claim properly at issue is a claim that ECM Plastics fully biodegrade in landfills within one year. *See* RAnsB 13-14. The Complaint reads more broadly: rather than stating a specific number of years, it alleges that ECM has claimed that ECM Plastics will completely break down into elements found in nature “within a reasonably short period of time” after customary disposal. Throughout the trial, Complaint Counsel identified a range from one to five years as the “reasonably short period of time” at issue. In their Pre-Trial Brief, Complaint Counsel asserted that ECM had impliedly claimed that “(1) ECM Plastics will completely biodegrade; (2) after customary disposal (*i.e.*, in a landfill); (3) in a period close to one year, or at least within 5 years.” *Id.* at 21; *see also id.* at 40 (stating that ECM’s implied claims – “that the ECM additive would make plastic biodegrade in a reasonably short period of time (*e.g.*, less than a year, or at least 5 years) after customary disposal (*i.e.*, in a landfill) – are likewise presumptively material”). Following trial, Complaint Counsel defined ECM’s implied claims in the same terms: complete biodegradation in a landfill “in a period close to one year, or at least within 5 years.” Complaint Counsel’s Amended Post-Trial Brief 28. While Complaint Counsel focused their arguments on biodegradation within one year, they also repeatedly presented evidence using five years as the applicable benchmark. *See id.* at 31 n.27, 41 n.35, 48 n.50, 50 n.53. Given these facts, ECM was on notice that an implied claim of biodegradation within five years was at issue, and its contention that “[h]aving not presented the alleged ‘five years or less’ implied claim in its Complaint or at trial, Complaint Counsel are foreclosed from doing so on appeal,” RAnsB 13, is unpersuasive.<sup>14</sup>

Further, through a facial analysis of the advertising in question, we reject ECM’s argument that the word “biodegradable” means, in the context of consumer advertising, *only* that the product is “intrinsicly” biodegradable, with no time element. Such an interpretation would render the term meaningless. This is because nearly all substances, including conventional plastics, will biodegrade if given enough time – even if that time period might be thousands or millions of years. Complaint Counsel’s landfill and polymer engineering experts, Drs. Tolaymat and McCarthy, as well as ECM’s own scientific expert, Dr. Sahu, have acknowledged this. *See* CCX-891 at 7 and 11, n.4 (conventional plastics will take thousands of years to biodegrade and “[o]ver time, all things will likely biodegrade”); RX-855 at 8, n.3 (Dr. Sahu estimating “conservatively (*i.e.*, on the low side) that the general time period for complete degradation of

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<sup>14</sup> In her partial dissent, Commissioner Ohlhausen argues that we have “revised” Complaint Counsel’s position by concluding that ECM impliedly claimed plastics with the ECM additive would biodegrade within five years. As support for her contention, she cites in particular Complaint Counsel’s statement at oral argument confirming that their principal argument was a claim of one year. Partial Dissent at 11 n.53. But, as Commissioner Ohlhausen herself acknowledges, Complaint Counsel explained in the very next sentence that they were also pressing a claim of five years as a fallback position, as they had during trial. Parties assert alternative positions all the time in litigation. There is nothing revisionist in our concluding that at least one of Complaint Counsel’s two alternative positions is amply supported by the evidence.

conventional plastics in the environment is, say, 1000 years,” and noting agreement with Dr. Tolaymat’s estimate that it could be “centuries, eons”).

Even if scientific understanding regards biodegradation as a process and does not incorporate any specific time frame, this tells us nothing about *consumers’ understanding*, which is the focus of our inquiry. *See, e.g., Thompson Med.Co.*, 114 F.T.C. at 809 n.33, n.35 (noting that “scientific and popular understandings are known to vary on occasion,” and that “[d]efinitions are less reliable than survey research as an indicator of how consumers understand advertisements because they can only provide the meanings generally used for words, rather than the specific meaning of the words in a particular context”).

ECM’s contention that consumers interpret biodegradability claims solely in terms of a process, without inferring a rate, in effect means that consumers view plastic labeled “biodegradable” no differently than any other plastic, *i.e.*, that they ascribe no meaning whatsoever to the word “biodegradable.” Such an interpretation is not plausible on its face. We find that the word “biodegradable” as used by ECM conveys some time element. But ECM’s proffered interpretation – that biodegradation is understood merely as a process without any reference to time – is unconvincing.

Turning now to the issue of the specific rate of biodegradation that is implied by an unqualified “biodegradable” claim, we agree with the ALJ that such representations in ECM’s marketing materials, including its tree logo, cannot reasonably be read to convey the alleged specific implied rate claim based on a facial analysis alone. However, for the reasons discussed below, we find that the extrinsic evidence in the record establishes that reasonable consumers expect that plastic products labeled “biodegradable” will decompose within a reasonably short period of time (*i.e.*, within five years), and would be misled if a plastic product labeled “biodegradable” did not do so.

First, we briefly consider evidence of ECM’s intent to convey a rate claim when using the term “biodegradable.” Then we turn to the surveys conducted to explore the time period conveyed when consumers interpret the term “biodegradable.” The central question is whether reasonable consumers would likely infer from the term “biodegradable” that a plastic product will not only eventually break down or decompose, but also that it will do so in a reasonably short period of time.

As discussed below, we find that the evidence indicates that ECM intended its unqualified biodegradability claim to convey a reasonably short period of time for ECM Plastics to biodegrade. Moreover, we find that the Frederick and Stewart consumer surveys are consistent and demonstrate that reasonable consumers would likely infer that message. The ALJ erred in his analysis of that key evidence. Accordingly, we find that Complaint Counsel have shown by a preponderance of the evidence that ECM made the implied claim that ECM Plastics will completely break down in landfills within a reasonably short period of time, *i.e.*, within five years.

**a. ECM Intended that “Biodegradable” Imply a Rate**

As set forth in Section I above, the core attribute of the ECM Additive was purportedly to speed up the biodegradation process of plastic products. ECM’s customers were interested in just how fast their products could degrade if they added the ECM Additive, which was an important factor in determining whether to purchase it. ID 288-89; IDF 1502. ECM’s intent to convey a reasonably short time period is evident in its customer communications. ECM asked its customers to sign a Certificate of Assurance that they would always incorporate ECM Additive in an amount representing at least one percent of plastic weight for the very reason that “ECM’s reputation can be materially and, perhaps, irreparably damaged when products claiming to use ECM MasterBatch Pellets fail to biodegrade with[in] a reasonable period of time.” CCX-826. Also, Mr. Sinclair testified that he would tell customers to bury a stick or small piece of wood (*e.g.*, a tongue depressor) alongside plastic treated with the ECM Additive, and “by the time that stick or tongue depressor, or whatever the case may be, biodegrades, you should expect the plastic to biodegrade as well...” CCX 818 (Sinclair Dep.) at 70. Most importantly, ECM knew that its direct purchasers wanted this information so that they could assure their downstream customers that the biodegradation rate was reasonably short and that those manufacturers and retailers could comfortably label their end use products as “biodegradable.” *See, e.g.*, IDF 280-81, 299, 1502-03. This evidence demonstrates that ECM intended the term “biodegradable” to convey a reasonably short time element.

**b. Dr. Frederick’s Google Survey**

Based on our *de novo* review of all four consumer surveys in the record, we find Dr. Frederick’s survey the most informative on the key issue of the impact of labeling a plastic article “biodegradable” on reasonable consumer expectations regarding time frames for biodegradation.

Dr. Frederick’s survey is the only one introduced in this case that is experimental.<sup>15</sup> As discussed below, Dr. Frederick’s survey establishes, among other things, that affixing a “biodegradable” label on a plastic product significantly increases the percentage of consumers who infer rapid decomposition of the package and provides evidence that a majority of consumers expect biodegradation to occur within five years.

Dr. Frederick used Google Consumer Surveys (“Google Surveys”) to collect almost 29,000 responses for his study. Google Surveys is a relatively new, web-based research tool introduced by Google in about 2012. In a Google Survey, an internet user encounters a “pop-up”

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<sup>15</sup> As Dr. Frederick explains, “[o]bservational research measures but does not manipulate variables.” CCSuppB, Frederick Dec. at 3. By contrast, experimental research manipulates as well as measures variables by asking “test” and “control” questions to determine what factor or factors affect the issue being addressed. *Id.* at 3-4. While observational (also referred to as “descriptive”) studies are intended to measure certain aspects of survey respondents’ beliefs or opinions about a given topic (in this case, biodegradability and, in particular, biodegradability rates), an experimental study is designed to explore cause and effect. *Id.* at 4. Dr. Stewart’s survey, for example, was an observational study. It was intended to measure various aspects of respondents’ beliefs about biodegradability, but all respondents received the same version of the survey, answered the same questions, and no variables were manipulated. By contrast, Dr. Frederick’s Google Survey functions both as an observational and experimental survey.

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. IDF 357, 359. Each consumer who participated in the survey was asked only a single question.

Dr. Frederick's survey consisted of approximately 60 questions. *See* CCX-860, App. A at 27-45. The first set of questions (1A through 1K) asked in various ways how much time the respondent thought it would take for a generic biodegradable product or a generic product labeled "biodegradable" to decompose. *Id.*, App. A at 27-28. A related series of questions (2A-2E) asked in various ways how long such products *should* take to decompose before the respondent would feel misled. *Id.*, App. A at 29. The responses to those questions showed that between 57% and 91% of the respondents who provided answers that included both a number and specific unit of time believe that biodegradation will occur within 5 years.<sup>16</sup> *Id.*, App. A at 27-28. They also suggest that, if asked the amount of time a package labeled biodegradable *should* take to biodegrade, consumers respond with even faster biodegradation rates. *See id.*, App. A at 29; CCSuppB, Frederick Dec. at 6.

A second set of questions focused specifically on *plastic* products, and it is the answers to those questions that are especially pertinent here. This portion of the survey included control questions. Question 3L asked survey respondents "If a plastic package is NOT labeled "biodegradable," how long will it take to decompose?" Similarly, without reference to biodegradability, Questions 3M and 3N asked how long it takes a plastic package or a plastic water bottle, respectively, to decompose. CCX-860, App. A at 33. Questions 3A to 3K, on the other hand, asked in various ways how long respondents believed it would take for a plastic water bottle or other type of plastic package that was labeled "biodegradable" to decompose. *Id.*, App. A at 30-33. Some of these latter questions presented photoshopped images of various types of "biodegradable" logos and asked "If you saw this label on a plastic water bottle, how long would it take to decompose?" *See id.*, Questions 3D-3G, App. A at 30-31. By contrast, other questions presented images of the "ECM biodegradable" tree logo on a plastic container (Questions 3H and 3J) and on a plastic bag (Questions 3I and 3K) (as the test questions). A separate set of questions presented an image of the identical plastic container (Question 3O) and plastic bag (Question 3P) without the ECM logo as controls. Again, the respondents were asked how long they thought it would take for each of the plastic products to decompose.

A significant percentage of respondents (40-76%) expected plastic products that are labeled "biodegradable" to decompose within five years. *See id.*, Questions 3A-3K, App. A at 30-33.<sup>17</sup> Between 77% and 85% reported that they would feel misled if a plastic product labeled "biodegradable" did not biodegrade in 5 years or less. *See id.*, Questions 4B & 4C, App. A at 35.

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<sup>16</sup> As discussed further below, Dr. Frederick employed a coding methodology that classified survey responses into time categories for analysis. The survey results referenced in this section reflect the percentages of all responses to a particular question that included both a number and a temporal unit.

<sup>17</sup> As one would expect, the survey respondents provided somewhat longer biodegradation times for biodegradable *plastic* products than for biodegradable products whose composition was unspecified. *See* CCSuppB, Frederick Dec. at 6 (comparing the results for Questions 1A & 3C and 1D & 3B).



Most importantly, Dr. Frederick's survey shows that labeling a plastic product "biodegradable" significantly *increased* the percentage of respondents who inferred decomposition of the plastic product within five years. In particular:

- For the plastic "Tupperware" container, the difference between the container bearing the "ECM Biodegradable" tree logo and the one without was 35% (56% versus 21%, comparing responses to Questions 3J and 3O);<sup>18</sup>
- For the plastic bag, the difference between the bag bearing the "ECM Biodegradable" tree logo and the one without was 32% (57% versus 25%, comparing responses to Questions 3K and 3P);
- For the plastic water bottle, the difference between the bottles bearing a "biodegradable" logo and one without ranged from 49% to 52% (comparing responses to Question 3N to responses to Questions 3D and 3E);<sup>19</sup> and
- For a plastic package, the difference between a package labeled "biodegradable" and one not labeled "biodegradable" was 42% (64% versus 22%, comparing responses to Question 3C and 3M).

Frederick CCSuppB, Frederick Dec. at 7-9.<sup>20</sup> Dr. Frederick concluded from these results that "[b]ecause the distribution of beliefs regarding products with biodegradable claims differs markedly from those lacking such claims," "the biodegradable claim is *causing* that difference." *Id.* at 10.

The interpretation of the word "biodegradable" on a plastic product as implying a biodegradation time within five years is reasonable. It makes sense that consumers read some time period into the word "biodegradable," because otherwise the term ceases to have any significance. In this context, the finding of an implied time period of five years is not "outlandish" or indicative that the respondents are unreasonable outliers. *See Deception*

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<sup>18</sup> The comparisons in the text make use of the responses to Questions 3J and 3K, rather than 3H and 3I. The questions are identical except that Questions 3J and 3K clarify that the depicted logo says "ECM biodegradable." Dr. Frederick explains that he included that language in Questions 3J and 3K because the small font for the word "biodegradable" was not legible on many computer screens, and he wanted to help ensure that the variable he intended to manipulate (ECM's "biodegradable" claim), was, in fact, taken into consideration by survey respondents. CCSuppB, Frederick Dec. at 7 n.5; Frederick, Tr. 1151, 1154. Although ECM argues that Questions 3J and 3K are therefore biased and leading, and the results unreliable, we understand Dr. Frederick's concern with the likely illegibility of the key "biodegradable" variable in Questions 3H and 3I and do not find the clarification leading or otherwise biased as ECM contends.

<sup>19</sup> The percentages are 70% for Question 3D, 67% for Question 3E, and 18% for Question 3N.

<sup>20</sup> Indeed, Dr. Frederick's survey indicates that a "biodegradable" label on a plastic product significantly increased the percentage of respondents who inferred decomposition of the plastic product within one year; the difference was 18% for the Tupperware, 25% for the plastic bag, 34-41% for a plastic water bottle, and 30% for a plastic package. CCSuppB, Frederick Dec. at 7-9; CCX-860, App A at 30, 33

*Statement*, 103 F.T.C. at 178, citing *Kirchner*, 63 F.T.C. at 1290.<sup>21</sup> Moreover, while we discuss the demographics of the respondents to Dr. Frederick’s survey in further detail below, the respondents certainly “fall within the range of persons who would be average or ordinary members of the adult population and, as such, are reasonable consumers.” *Thompson Med. Co.*, 104 F.T.C. at 810.

We recognize that many of the respondents to Dr. Frederick’s survey may appear to hold incorrect underlying beliefs about the biodegradability of conventional plastic items. *See, e.g.*, CCX-860, Questions 3O & 3P, App. A at 34 (indicating that 21% of respondents stated that a plastic “Tupperware” container would degrade in five years or less, and 25% of respondents stated that a plastic bag would degrade in five years or less, when neither item was marked as “biodegradable.” However, the fact that the survey respondents are confused or mistaken about biodegradation does not make them unreasonable and does not mean that they are acting unreasonably.<sup>22</sup> Biodegradation claims – like most environmental benefit claims in general – are credence claims; consumers are unable to verify for themselves whether they are true. It is not unreasonable for consumers to have mistaken ideas about a biological process that they almost certainly have never directly observed.

Therefore, Dr. Frederick’s survey demonstrates that attaching a “biodegradable” label to a plastic product leads reasonable consumers to believe that the product will biodegrade within five years.

ECM, however, argues that the methodology of Dr. Frederick’s survey was seriously flawed, and that the ALJ correctly decided it was entitled to little if any evidentiary weight. It argues that the survey does not qualify as experimental, and that the only reliable survey in the record is the observational survey of its own expert, Dr. Stewart. RSuppB 1-6. In particular, ECM accuses Dr. Frederick of using a less expensive Google Survey only because he could then pocket more of his fixed fee. RAnsB 26. It argues that Dr. Frederick’s survey methodology and design are fatally flawed because Dr. Frederick failed to define a relevant population or use an appropriate sampling methodology, failed to ask appropriate questions, and failed to code and

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<sup>21</sup> Accordingly, we find no substance to Commissioner Ohlhausen’s varying suggestions, Partial Dissent at 8-10 & n.46, that we have not considered whether the interpretation of the label “biodegradable” on a plastic product to imply biodegradation within five years is reasonable, or that we have based consideration of that issue solely on the finding that a significant minority of consumers hold that interpretation.

<sup>22</sup> One of the Commission’s major areas of advertising enforcement activity relates to weight loss products, and despite the scientific consensus that successful weight-loss efforts require changes to diet and/or exercise, consumers often will believe implausible weight-loss claims. However, the Commission still finds deception and does not consider such consumers unreasonable because they believe an advertiser’s claims – against the weight of science – that a miracle pill will enable them to lose weight effortlessly. *See, e.g., FTC v. 7734956 Canada Inc.*, No. 1:14-cv-02267-CCB (D. Md. Jul. 16, 2014) (complaint) (challenging, *inter alia*, claims that a dietary supplement could cause a minimum of 20 pounds of weight loss per week, without the need to diet or exercise); *Wacoal America, Inc.*, FTC Docket No. C-4496 (Nov. 10, 2014) (complaint) (challenging claims that undergarments made with fabric containing microcapsules of caffeine eliminate cellulite, destroy fat cells, and cause substantial slimming); *see also Deception Statement*, 103 F.T.C. at 179 n.30 (to some consumers “the promises of weight loss without dieting are the Siren’s call, and advertising that heralds unrestrained consumption while muting the inevitable need for temperance, if not abstinence, simply does not pass muster.”) (quoting *Porter v. Dietsch*, 90 F.T.C. 770, 864-65 (1977), *aff’d*, 605 F.2d 294 (7th Cir. 1979), *cert denied*, 445 U.S. 950 (1980)).

analyze the data correctly. RAnsB 25-32. Finally, ECM contends that the Google Survey “suffers from disinterest bias.” RAnsB 32-34.

ECM’s arguments are unpersuasive. First, we find no basis for impugning Dr. Frederick’s motives in using a Google Survey rather than a more traditional approach, such as Dr. Stewart’s landline telephone survey. While the record shows that Dr. Frederick chose Google Surveys in part because of its lower cost, *see, e.g.*, Frederick, Tr. 1086, he explained that Google Surveys has substantive benefits that contributed to his selection of the methodology and that he has used Google Surveys in many other research projects. CCX-860 at 13; Frederick, Tr. 1104. For example, Google Surveys enable the use of substantially larger sample sizes,<sup>23</sup> reaching a broader spectrum of American consumers than surveys limited to landline telephone users. *See id.*; CCX-865 (Frederick Rebuttal Report) at 4; Frederick, Tr. 1087 (testifying that landline telephone surveys such as Dr. Stewart’s are skewed toward older Americans). Also, with a Google Survey, a researcher can present visual images of a product with and without the challenged advertising and more nearly replicate the experience of a consumer in encountering a “biodegradable” claim. Frederick, Tr. 1091-92.

Second, we disagree with ECM’s contentions that Dr. Frederick failed to define the relevant population and that the demographics of his sample are “unknowable.” RAnsB 27-29. Dr. Frederick appropriately defined the relevant population as “American consumers,” Frederick, Tr. 1066-67, and further explained why the data collected through Google Surveys is “highly representative both demographically and psychographically” of that population. Frederick, Tr. 1410; *see also id.* at 1067-75. As Dr. Frederick explained, Google Surveys pays approximately 340 mainstream Internet content providers to present survey questions to Internet users. Google Surveys then uses dynamic imputation algorithms to infer the demographic representativeness of each survey sample based on five data points: IP addresses provide information about geographic region and urban density, and browsing history provides information about gender, age, and income. Google Surveys reports this demographic information, along with the survey results, to the researcher. *See* CCX 865 at 3-4; Frederick, Tr. 1076-77; CCX-863 (spreadsheet showing demographic data for Dr. Frederick’s survey respondents).

ECM argues that Google’s inferred demographics “can be wrong” and that screening questions are essential to ensure a survey sample is representative. RAnsB 27-28. For example, ECM says, if the respondent has disabled the “cookies” on his or her computer, Google cannot use the respondent’s browsing history to infer gender or age. RAnsB 28. Likewise, Google’s inferences about gender, age, or income could be incorrect if one family member used another’s computer in responding to the survey. *Id.*

Dr. Frederick acknowledges that Google’s inferred demographics may not always be accurate or complete as to individual respondents. As he observes, however, even if there are

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<sup>23</sup> As mentioned above, Dr. Frederick’s survey included approximately 60 questions and collected a total of nearly 29,000 responses. *See, e.g.*, CCX-860 at 12; Frederick, Tr. 1059. However, because each respondent was asked only one question, the sample size for any particular question in the survey ranged from 72 to 1,704. *See* CCX-860 at 12. For each of Questions 3A-3P discussed above (which all related to the biodegradation of plastic containers, bags, water bottles, and packages), the sample size ranged between 200 and 268. *See id.*, App. A at 30-34.

some imperfections as to individual respondents, those imperfections would not compromise the representativeness of the total pool of 29,000 respondents as a whole.<sup>24</sup> See CCX-865 at 4 (“Based on my understanding of how [Google Surveys] operates, I can conclude that it assesses demographics in the aggregate with accuracy”); *id.* at 3-4 (although Google Surveys “cannot ascertain every demographic characteristic of every respondent, every time, with perfect accuracy, any moderately large sample is highly likely to be demographically representative”); Frederick, Tr. 1079; *see also* Stewart, Tr. 2745 (opining as to his own survey that individual imperfections do not matter if the overall sample is representative). In addition, Dr. Frederick testified that he had confidence in Google’s sampling approach in part because various studies – including one by the highly-regarded Pew Research Center – indicate that the Google sampling approach compares favorably to other survey approaches, including internet panels. Frederick, Tr. 1068-76.<sup>25</sup>

We likewise are not persuaded that screening questions are “essential” for Dr. Frederick’s survey as ECM maintains. At least when the population at issue is all American consumers rather than a particular subset, drawing a large sample through mainstream internet content providers and inferring demographics using Google’s techniques is adequate. Indeed, as we discuss *infra*, Dr. Stewart’s screening questions had significant problems of their own.

Third, ECM faults Dr. Frederick’s survey for failing to ask appropriate questions. To begin with, ECM argues that his questions are leading – they “assume[ ] that the representation of ‘biodegradable’ communicates a biodegradation rate,” thereby “injecting a bias” into the questions. RAnsB 29-30. To avoid this, ECM suggests, a proper question must be open-ended, *e.g.*, “What does the term biodegradable mean to you?” See *id.* at 29. But that merely asks the survey respondent to provide his or her definition of “biodegradable,” and a definitional question is unlikely to elicit a response sufficiently focused to analyze or quantify a specific attribute. Asking about a specific attribute may be necessary to focus the answer, and if neutrally phrased, need not be deemed inappropriately leading. In this case, we find nothing biased in Dr. Frederick’s questions asking about the respondents’ views on how long it takes for plastic items to biodegrade. Indeed, this was the key question the survey was intended to address, and Dr.

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<sup>24</sup> While the sample size for any particular question in the survey was a subset of these 29,000 respondents, ranging in number from 72 to 1,704, *see supra* note 23, if the total pool of respondents is representative of the general population, a randomly selected and smaller but still moderately-sized subset of respondents from that pool who responded to a particular question is also likely to be representative. See Frederick, Tr. 1360-61; CCX-865 at 4.

<sup>25</sup> See CCX-874 (Pew study comparing the results of its own telephone survey of internet users with Google Survey respondents and finding little difference); CCX-872 (*New York Times* article concluding that Google Surveys outperformed established pollsters including CCN, Gallup, and Reuters in predicting the 2012 presidential election results); CCX-868 (Google-commissioned study showing that Google Surveys performed as well as or better than internet panel surveys and deviated only 4% from established benchmarks). The Pew Research study, for example, found that Google Surveys “achieved a representative sample of internet users on gender, age, race/ethnicity, marital status and home ownership when compared with internet users in Pew Research Center,” CCX-874 at 5, and found a median difference of three percentage points in responses to 43 questions about a wide range of policy and political questions, CCX-874 at 2.

Frederick, by asking it in numerous different ways, sought to control for any bias from the manner in which a particular question was phrased.<sup>26</sup>

ECM further argues that Dr. Frederick's single-question design cannot provide reliable results and that multiple questions must be asked to sufficiently probe consumers' understanding of the term "biodegradable." We again disagree. The single-question design used by Dr. Frederick had multiple benefits. For instance, respondents' answers to questions were not influenced by the phrasing of earlier questions. *See* Stewart, Tr. 2689 (acknowledging that information conveyed to respondents earlier in a survey can affect their answers to later questions). Moreover, it allowed the survey to mimic the various ways "biodegradable" claims reach consumers by presenting, to random samples of the same population, visual images of different types of plastic products, some containing different biodegradable labels. *See* CCSuppB, Frederick Dec. at 4, 7. Furthermore, asking questions in varying ways provides greater confidence in the results. As Dr. Frederick explained, arriving at "the same result despite asking questions in different ways" is a good indication that the results are "robust." Frederick, Tr. 1061-62. In short, although multi-question, "funnel" designs (that progress from more general to more narrow questions on a topic) are often used in observational studies such as Dr. Stewart's, we find nothing inherently inferior in the single-question design used by Dr. Frederick.

Fourth, ECM faults Dr. Frederick's survey for "disinterest bias," suggesting that respondents might not have given serious consideration to the Google Survey questions because they wanted to access internet-based content, not answer a survey question. As evidence, ECM points to selected responses in Dr. Frederick's data base that it describes as nonsensical or obviously made in protest (*e.g.*, "go away"). RAnsB 33. However, as Dr. Frederick points out, the number of obviously disinterested protest responses in the Google Survey was *de minimis* – less than 1% of a 29,000 respondent sample (Frederick, Tr. 1123-24, 1136, 1138; CCX-865 at 5). Moreover, there is no reason to believe that "disinterest bias" is of any greater concern in a Google Survey than in a telephone survey, a mall intercept survey, or any of the other more traditional survey methods, some of which may be more invasive and require more time. Finally, Google itself takes steps to validate respondents' willingness to provide meaningful responses by asking questions with obvious answers and ensuring that those who respond incorrectly do not receive future Google Surveys. Frederick, Tr. 1099-1100. Thus, we find this criticism to be unpersuasive.

Finally, ECM faults Dr. Frederick's coding and analysis of the data collected by Google. In particular, it contends that Dr. Frederick used a "bright-line" coding rule that biased the results. That rule specified that, for questions asking for a numeric response, only responses with both a number and a unit of time (*e.g.*, one year) were to be coded.<sup>27</sup> ECM contends that this

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<sup>26</sup> Dr. Frederick asked 12 open-ended questions, phrased in slightly different ways, about the respondents' expected time frames for biodegradation of plastic items. Although ECM suggests that these are "closed-ended" questions of the type we criticize in the APCO and Synovate surveys, discussed *infra*, they are not. Whereas the APCO and Synovate questions provided a limited set of options from which the respondents could select answers, Dr. Frederick's questions allowed respondents to state their own answers.

<sup>27</sup> Dr. Frederick did not include several categories of responses in his calculation of time-frame percentages, namely: (i) numeric responses lacking a temporal unit (*e.g.*, a response of "7"); (ii) responses containing a temporal unit, but

biased the results by excluding truthful answers such as “it depends” and “I don’t know,” on the one hand, and including nonsensical responses such as “one nanosecond” on the other. RAnsB 31. ECM accuses Dr. Frederick of using the rule to “force fit” the responses into preconceived time categories, and argues that this was tantamount to turning open-ended questions into closed-ended questions. RAnsB 32. ECM labels Dr. Frederick’s coding methodology “particularly egregious” because it reduces the denominator of the ratios, “which has the effect of inflating the reported percentages.” *Id.* It also contends that “the coding was invalid because it was performed by individuals who were not “blinded.” *Id.*

We find none of these criticisms convincing. First, Dr. Frederick’s “bright-line rule” was designed precisely to prevent the coding process from introducing bias through the coders’ interpretation of responses that were vague or otherwise unclear.<sup>28</sup> *See, e.g.,* CCX-865 at 6; Frederick, Tr. 1131; CCSuppRB, Exh. A (Frederick Dec.) at 17. The bright line served to ensure that uniform rules were followed. Frederick, Tr. 1133. Although certain categories of responses were not included in his calculation of time-frame percentages for each question calling for a numerical response, Dr. Frederick reported both the coded numerical responses and the total number of uncoded responses. *See* CCX-860 at 12 n.7 & App. A. Additionally, he provided the raw data in an Excel spreadsheet. *See* CCX-863. This was both transparent and reasonable.

Second, ECM has provided no basis for believing that Dr. Frederick’s omission of uncoded responses from his calculations significantly affected the results. Omitting 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. *See* CCX-865 at 6; Frederick, Tr. 1123-28.

Moreover, ECM’s contention that omitting responses from the denominator of the calculations was particularly “egregious,” does not hold up under scrutiny. Indeed, even if *all* of the responses excluded by Dr. Frederick’s coding rule were included in the denominator with no adjustment to the numerator – an unrealistic assumption that every uncertain, ambiguous, or unclear response should be counted as stating an expectation that biodegradation will take more than five years – the results still support Dr. Frederick’s findings. The percentage of respondents who believe that a “biodegradable” plastic product biodegrades or decomposes within five years remains quite significant – ranging from 30% to 65% in responses to Questions 3A through 3K.<sup>29</sup>

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no specification of quantity (*e.g.*, a response of “months” or “years”); (iii) responses indicating unwillingness to answer without further clarification (*e.g.*, “it depends”); (4) responses indicating unwillingness to respond because of uncertainty (*e.g.*, “I don’t know”), and (5) “other responses” (including protest responses or responses designed to bypass the survey wall (*e.g.*, “asdf” or “blah”)). CCX-865 at 6. Dr. Frederick and his assistants coded 21,453 of the responses (including the responses to the binary questions, which did not require a numeric response). CCX-860 at 12 n.7.

<sup>28</sup> As is common in academic research, Dr. Frederick hired several research assistants to assist him in coding the responses.

<sup>29</sup> The number of responses of five years or less is calculated by multiplying the total number of coded responses by the percentage of coded responses that estimated periods of five years or less. The number of responses of five years or less can then be divided by a denominator consisting of the sum of coded and uncoded responses. Dr. Frederick’s report provides all the necessary information. *See* CX-860 at 12 n.7.

For instance, after adding all the uncoded responses to the denominator, the percentage of survey respondents answering Question 3N, “How long would it take a plastic water bottle to decompose” with a response of less than or equal to five years is 13%; the percentages answering Questions 3D and 3E – asking the same question about plastic water bottles with different “biodegradable” labels – are 49% and 44%, respectively. The increase of 31-36% shows that the biodegradable label leads a significant minority of reasonable consumers to believe that the plastic bottle will biodegrade within five years, even after inclusion of the uncodeable responses in the document. Similarly, adding all uncoded responses to the denominators in the comparisons of plastic “Tupperware” containers and plastic bags with and without the “biodegradable” label shows that adding the label increases the percentage of those offering responses of less than five years by 28% and 20%, respectively.<sup>30</sup> In each case, adding the “biodegradable” label continues to lead a significant minority of reasonable consumers to believe that the plastic product will biodegrade within five years, even after inclusion of the uncodeable responses in the denominator.

Finally, ECM’s criticism about Dr. Frederick and his coders not being “blinded” – meaning that at the time they were analyzing the survey responses, they were aware that the survey pertained to litigation brought by the FTC against ECM – is likewise unpersuasive. Of course, Dr. Frederick knew the source of funding for his survey; he had to, just as Dr. Stewart knew that ECM was the source of funding for his survey. However, ECM has cited no evidence even suggesting that the Google Survey coding – under the “bright-line rule” – was compromised as a result of not being “blinded.”

In sum, ECM’s criticisms of Dr. Frederick’s Google survey are not well founded. The Google survey asked the key questions at issue of a large and representative sample of U.S. consumers; the questions were clear and not improperly leading; and the responses were coded and analyzed in an acceptable and transparent manner. Of the four surveys in the record, we find the Google Survey the most informative regarding the consumer takeaways from unqualified “biodegradable” claims, and we give it substantial weight.

Commissioner Ohlhausen agrees with the Commission’s decision in this case except for one issue: how to interpret ECM’s unqualified “biodegradable” claim. She opines in a separate statement that Dr. Frederick’s survey does not offer sufficiently reliable extrinsic evidence to draw any conclusions about consumer interpretations of the word “biodegradable.”<sup>31</sup> As noted above, consumer surveys and in particular experimental surveys are highly informative on questions of consumer interpretations, as surveys constitute “direct evidence of what consumers actually thought upon reading the advertisement in question,” *Thompson Med. Co.*, 104 F.T.C. at 788-89. The methodological design of such research varies significantly and the Commission does not demand perfection, “but looks to whether such evidence is reasonably reliable and

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<sup>30</sup> After adding in the uncoded responses, the percentages answering Questions 3O and 3J with responses of less or equal to five years are 16% and 44%, respectively; the percentages providing that response to Questions 3P and 3K are 21% and 41%, respectively.

<sup>31</sup> Commissioner Ohlhausen’s statement does not address the other extrinsic evidence supporting our finding about the unqualified claim, which is the evidence proving ECM’s intent that the word “biodegradable” should convey a reasonably short rate of degradation. *See* Section III.A.2.a, *supra*.

probative.” *POM Wonderful*, 2013 WL 268926, at \*45. For the reasons explained in detail above, we find that Dr. Frederick’s experimental results showing the effect of the unqualified “biodegradable” claim are reasonably reliable and probative.

In her statement, Commissioner Ohlhausen questions the reliability of Dr. Frederick’s survey based on an alleged disparity in consumer perception depending upon whether respondents who were shown a plastic product bearing an ECM biodegradable logo were presented with a question that specifically called out the content of that logo or not. Partial Dissent at 5-6. In fact, to us this disparity just confirms that the logos on the labels used for two particular questions were indeed illegible. The decision in *Thompson Medical* is instructive. There, the Commission found that consumer survey results from “unaided” recall questions were not persuasive in determining whether consumers thought Aspercreme contained aspirin, as they showed that only 2.9% to 5% thought it did. Yet, the responses to the “aided” recall questions showed that 22.2% believed the product contained aspirin compared to only 4.8% and 6.3% for two comparative products, which allowed the Commission to conclude with confidence that consumers thought the product contained aspirin based on respondent’s ad. 104 F.T.C. at 805. In the case of Dr. Frederick’s survey data, the only disparity in the responses that Commissioner Ohlhausen cites are those relating to the question pairings in which the label stating “biodegradable” is difficult to read. Five other question pairings show a consistently high differential, ranging from 32-52%.

Commissioner Ohlhausen also finds it problematic that the majority does not defer to the ALJ’s findings regarding the relative credibility of opinions expressed by Drs. Frederick and Stewart.<sup>32</sup> She notes that, unlike the ALJ, the Commissioners have not observed “the manner and tone” of the experts’ explanations and answers to questions. Partial Dissent at 3 (citing IDF 324; ID 188). The ALJ, however, does not suggest that the witnesses’ manner or tone had any bearing on his findings. Rather, the ALJ’s findings rest on his assessment of the reasoning, credibility, and persuasiveness of the experts’ “opinions.” IDF 324; ID 188. We are well situated to give *de novo* review to the experts’ opposing opinions and to draw our own assessments thereof. *See generally, POM Wonderful*, 2013 WL 268926, at \*45 n.23 (disagreeing with an ALJ’s assessment that was not based on “observation of [the expert’s] courtroom demeanor”).

### **c. Dr. Stewart’s Survey**

ECM’s expert, Dr. Stewart, conducted a telephone survey in connection with this litigation in the spring of 2014. IDF 498. This survey likewise shows that at least a significant minority of reasonable consumers believe that an item labeled “biodegradable” will decompose within five years. Dr. Stewart’s survey is a traditional, “funnel” type, observational consumer survey.<sup>33</sup> In contrast to Dr. Frederick’s Google Survey that included a total of 29,000

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<sup>32</sup> We note that Commissioner Ohlhausen is herself willing to discount Dr. Stewart’s survey findings, concluding that “[t]he consumer surveys all have significant methodological flaws.” Partial Dissent at 3.

<sup>33</sup> Commissioner Ohlhausen argues that the Stewart study cannot shed light on how ECM’s claims affected consumers’ preexisting beliefs because it lacks an experimental control. Yet testing with open-ended responses is an appropriate methodology to understand consumer takeaway from an ad claim, which is the issue at hand. “There is nothing in Commission precedent that requires the use of a control ad for open-ended questions.” *Stouffer Foods*



respondents,<sup>34</sup> Dr. Stewart included the responses of only 400 landline telephone users, who were selected based on seven screening questions. RX-856 at 21 (referencing RX856 Page 21), & App. B.<sup>35</sup>

The initial questions were general. Question 1 asked, “When you hear the term ‘biodegradable’ what does that mean to you?” RX-856 at 23 & App. B (RX-847). Question 2 asked, “Is the fact that a product or package is biodegradable important to you?” *Id.* And Question 3 asked, “Is the fact that a product is biodegradable helpful to the environment or not?” *Id.* at 24. The results were as follows:

- 82% of the respondents reported that they interpreted “biodegradable” to mean something about disintegration, decomposition or breakdown;
- 71% reported that the biodegradability of a product or package is important to them; and

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*Corp.*, 118 F.T.C. at 808; *see also Telebrands*, 140 F.T.C. at 318 (“it is appropriate to consider the open-ended responses without netting out any controls”).

<sup>34</sup> As explained above, the sample size for any given question in Dr. Frederick’s survey was a subset of the 29,000 total pool of respondents, *see supra* note 23.

<sup>35</sup> Dr. Stewart defined the relevant population as “men and women over the age of 18 in the United States who reported that they had personally purchased any product in the past month that came in a plastic container or was made of plastic.” RX-856 at 19-20. “In addition, respondents must have indicated that they have a general understanding of what the term ‘biodegradable’ means.” *Id.* at 20; *see also id.* n.13 (explaining that Dr. Stewart “disqualified” 68 respondents because they had not purchased a plastic product within the last month, and 39 because they did not have an acceptable understanding of the term “biodegradable.”). Dr. Stewart extols his respondents as being particularly “sophisticated” and criticizes Dr. Frederick for not including questions to screen for “knowledgeable” consumers. RSuppB, Exh. A (Stewart Dec.) ¶ 17. (“In contrast to the results of the APCO, Synovate, and Frederick surveys, my survey offers a picture of knowledgeable consumers with very sophisticated views of what biodegradation means.”). We do not share Dr. Stewart’s view. The relevant population is not limited to especially knowledgeable, “sophisticated” consumers; reasonable consumers who do not properly understand the biodegradation process – or who have not recently purchased a plastic product – may also be deceived by marketing materials, and we are concerned when that occurs. *See Deception Statement*, 103 F.T.C. at 177 n.20 (“An interpretation may be reasonable even though it is not shared . . . by particularly sophisticated consumers.”). Accordingly, it is Dr. Stewart’s conception of the relevant population – not that of Dr. Frederick – that we find problematic.

For the same reason, we reject ECM’s argument that those respondents who reported low time frames for biodegradation are simply uninformed and therefore “unreasonable,” and hence cannot be counted toward the significant minority of reasonable consumers who believe that products labeled “biodegradable” biodegrade within a reasonably short period of time. *See, e.g.*, RX-856 at 11 (“This is just what one might expect when consumers are asked factual questions about which they have little or no knowledge”); RSuppB, Exh. A (Stewart Dec.) at ¶ 21 (attributing low time frames reported by consumers to their non-scientific beliefs as to fast biodegradation); RSuppB 13 & n.6 (arguing that “Complaint Counsel has not shown that at least a significant minority of *reasonable* consumers interpret the claim ‘biodegradable’ to mean complete decomposition into elements found in nature within one year” because “believing that a plastic product will biodegrade completely within one year without qualification is unreasonable because it is scientifically invalid”) (emphasis original). This is not a case in which an “outlandish” belief is held by “a few misguided souls,” as ECM suggests. *See RAnsB 16* (quoting *Kirchner*, 63 F.T.C. 1282, at \*6.). Rather, as shown below, Dr. Stewart’s own study likewise establishes that at least a significant minority of his “sophisticated” consumers believe that a product denoted “biodegradable” will biodegrade within a reasonably short period of time, *i.e.*, within five years.

- 95% reported their belief that the biodegradability of a package is helpful to the environment.

RX-856 at 27 & App. D (RX-846 at 8-9, 14-15).

More pertinent to the issue here, Question 4 asked, “If something is biodegradable, how long do you think it would take for it to decompose or decay?” Those who answered this question were then asked two subquestions. Subquestion 4a asked for a yes/no response, “Do you think there are differences in the amount of time it takes for different types of products to biodegrade, decompose or decay?” Those who answered “yes” were then asked Question 4b, “What differences exist in the time for different types of products to biodegrade, decompose or decay?” RX-856 at 24 & App. B (RX-847).

Although the form of Question 4 – *i.e.*, referring to “something” rather than to plastic in particular – is more vague and less worthy of weight than Dr. Frederick’s many questions focused on plastic products, it is still noteworthy that 64% of those who provided answers to Question 4 with both a number and a unit of time reported their belief that biodegradation would occur in five years or less. CCSuppB, Frederick Dec. at 14.<sup>36</sup> Even if all responses are taken into account (including those that did not include a specific time frame), 23% answered with time frames of five years or less, by Dr. Stewart’s own calculations. *See* RX-856 at 28.<sup>37</sup> We find that the respondents to Dr. Stewart’s survey are at least “average or ordinary members of the adult population” and, as with the consumers that responded to Dr. Frederick’s survey, in the absence of any evidence to the contrary we conclude that they are “reasonable.” *See Thompson Med. Co.*, 104 F.T.C. at 810. Thus, Dr. Stewart’s own calculations drawn from his own survey, which the ALJ praised for its adherence to traditional survey methods, likewise show that at least a significant minority of reasonable consumers believe that a product denoted “biodegradable” will decompose within a reasonably short period of time.

ECM contends that such reliance on Question 4 data is improper, and urges us to focus instead on responses to the first question and to Subquestions 4(a) and (b). *See* RAnsB 20; RSuppB 10-11. It argues that the answers to Question 1 show that consumers do not define “biodegradable” to encompass any message as to the rate of biodegradation – in particular, that only 3% of the respondents answered Question 1 with a specific time frame. RSuppB 11. It further argues that the responses to Subquestions 4(a) and (b) show that consumers do not understand “biodegradable” to mean any “uniform,” “set,” or “fixed” time frame for biodegradation, but rather realize that the time frames for biodegradation are highly variable depending on what the item is and how it is disposed of. *See, e.g.*, RAnsB 14, 20; RSuppB 1-2, 13. From this ECM argues that Complaint Counsel have not met their burden of showing that

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<sup>36</sup> A table prepared by Dr. Stewart suggests a similar result. *See* RX-846 at 20-21. It reports 119 responses in categories falling in the interval of five years or less. It reports 64 responses in categories exceeding five years, including one category designated “Forever/takes a long time/100 years.” Even if we were to treat all of the latter 64 responses as providing both a number and a unit, 65% (119 of 183) of the responses named a period of five years or less. Our analysis accepts the smaller figure cited in the text.

<sup>37</sup> Summing the nine entries in Dr. Stewart’s table for periods of five years or less yields 119 responses, or 30% of the total sample size. RX-846 at 20-21. Again, to be conservative, we rely only on the smaller figure cited in the text and validated by Dr. Stewart.

consumers have any “fixed” rate of biodegradation in mind when they see a product labeled “biodegradable,” and that the implied rate claim therefore fails. *See, e.g.*, RSuppB 13.

We disagree. First, ECM’s assertion that only 3% of the respondents to Question 1 explicitly mentioned a “time” or “rate” is incorrect. In addition to respondents who provided a specific time period (*e.g.*, “a year or two”) or comparative rate (*e.g.*, “faster than a normal plastic product”) in their answers, we note that 18% of respondents specifically used the word “time” in their response to this question, with seven respondents providing an answer that referenced a “reasonable” amount or period of time, three referencing a “relatively short” amount of time, and another ten referencing a “certain” amount or period of time. *See* RX-606. We think it is clear that these particular responses all incorporated the concepts of both time and rate. The vast majority of the other references to “time” expressed the belief that biodegradation occurs “over time,” suggesting that respondents believe there is a time element to the process of biodegradation. *Accord* RX-605 at 7 (stating that 22% of responses to Question 1 referenced disintegration, breaking down, rotting, or decomposing “over time”). Another 7% of respondents stated that biodegradable items will “eventually” decompose or break down, suggesting that there is an outer boundary to the expected time period relevant to biodegradation. *Id.*

Second, we do not find it at all surprising that most of the respondents did not volunteer a specific time frame when asked a general question, like Question 1, about what biodegradability means to them. To illustrate this point, as noted above, when asked directly in Question 3 whether a biodegradable product is helpful to the environment, 95% of respondents answered “yes.” Yet in response to Question 1 asking what the term “biodegradable” means to them, a far lower percentage provided an answer referencing any sort of environmental benefit or impact. *See* RX-846 at 8 (reporting that 26% of respondents to Question 3 gave an answer referencing safety, the environment, not harming the earth, or pollution); RX-856 at 27, 28 & App. E (RX-606). Following ECM’s logic, we would be forced to conclude that if a consumer did not reference an environmental benefit in response to Question 1, it would be improper to conclude that the term “biodegradable” implied an environmental benefit, regardless of the consumer’s answer to Question 3.

As Dr. Frederick persuasively points out, ECM’s argument is analogous to claiming that “only 7% of people have an expectation of how long it would take an ice cube to melt if only 7% happened to use the word ‘time’ or ‘rate’ when asked, ‘When you hear the term melt, what does that mean to you?’” CCSuppRB, Frederick Dec. at 8. Question 1 inquired about biodegradation’s meaning, not its specific attributes, and the fact that survey respondents did not volunteer answers about a specific time frame does not mean that they do not have some idea of how long it takes for a product labeled biodegradable to biodegrade, in contrast to an unlabeled version of the same product. Rather, a more focused question is required to elicit this information. In Dr. Stewart’s survey, that is Question 4.

ECM also places great weight on the response to Subquestion 4a, RX-846 at 21, repeatedly highlighting the fact that 98% of survey respondents answered “yes” to the

subquestion “Do you think there are differences in the amount of time it takes for different types of products to biodegrade, decompose or decay?”<sup>38</sup> ECM’s reliance on this result is misplaced.

The result is hardly surprising: would we expect survey respondents to believe that banana peels, plastic bottles, and steel girders all biodegrade at the same rate? Moreover, the responses to Question 4 and Subquestion 4a are not inconsistent with the results of Dr. Frederick’s Google Survey. There is no contradiction between, on the one hand, consumers in Dr. Stewart’s study stating that the length of time an unspecified “something” takes to biodegrade “depends,” and believing that different products might take different amounts of time to degrade, and, on the other hand, respondents in Dr. Fredrick’s Google Survey providing a specific time period for degradation *when presented with a question about a specific object* (e.g., a plastic bottle, container, or bag).

Moreover, the responses to Subquestion 4a are no basis for ignoring responses to other questions in the Stewart survey – such as Question 4, which conveys the perception of many consumers that biodegradable products, in general, will biodegrade within five years – or responses to questions in other surveys that probed consumers’ perceptions of biodegradation rates specific to plastic products. Contrary to ECM’s contentions (*see, e.g.,* RSuppB 6), Complaint Counsel need not show that there is one “set,” “fixed” or “uniform” time period in which consumers believe that all types of products will biodegrade. Rather, they must show that consumers acting reasonably would likely infer from ECM’s claim of biodegradability that ECM products will biodegrade within a reasonably short period of time. As discussed above, Dr. Frederick’s survey, which is experimental as well as observational, provides the clearest and most comprehensive insights into that key issue. However, Dr. Stewart’s observational survey also supports Complaint Counsel’s position that at least a significant minority of reasonable consumers believe that a product labeled “biodegradable” will decompose within a reasonably short period of time, and we also take that evidence into consideration in our analysis.

#### **d. The APCO Survey**

Complaint Counsel also introduced the results of a 2006 telephone survey commissioned by the American Plastics Council (“APCO”). Among other things, the survey asked approximately 1,000 respondents about their perception of the term “biodegradable.” IDF 455. They responded as follows to Question 4:

If a package is labeled “biodegradable,” what should be the maximum amount of time that it should take for that package to decompose?

1 month or less	19%
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<sup>38</sup> *See, e.g.,* RSuppB 11; Tr. Oral Arg. 10, 15 (ECM Counsel stating, “Then when you add in the fact that 98 percent – that’s the extraordinary figure 98 percent. Rarely do you ever see that in a survey – 98 percent recognized variance in the rate based on the environment and based on the type of plastic . . .”). Despite ECM Counsel’s statement, the 98 percent figure was a response to Dr. Stewart’s question about “different types of products,” not different types of plastic.

3 months	7%
6 months	8%
1 year	26%
2 to 4 years	5%
Five years or more	16%
Unsure	17%

CCX-860 App. at 53. Thus, 65% of the respondents indicated that the maximum amount of time a package labeled “biodegradable” should take to decompose was four years or less.

The ALJ, however, found Question 4 to be seriously flawed, primarily because it was closed-ended and offered choices that “predisposed people to select a short time frame rather than a longer time frame.” ID 204-05.<sup>39</sup> He also found that the APCO survey failed to address “the material factual issue in this case” which, in his view, “is what message was implied by the term “biodegradable,” including “*whether* the term ‘biodegradable’ communicates to the consumer *any* message as to a rate for complete biodegradation.” ID 204. ECM urges us to conclude that the APCO survey is invalid on these grounds. RAnsB 24-25. In addition, the ALJ noted that the use of the word “should” could be interpreted by survey respondents as referring to what would be desirable as opposed how long decomposition would actually take. ID 206.

We recognize that APCO Question 4 is a closed-ended question in which most of the available choices are clustered around a year or less, and that this may have biased the responses toward lower time frames and led to more homogeneity in the responses than would otherwise have been the case. Indeed, we have previously identified this as a flaw in the APCO survey.<sup>40</sup> And we also recognize that use of the word “should” could be construed by some survey respondents as asking what would be desirable, although we think a reasonable reading in the context of the question as a whole would be that it is asking for the maximum amount of time consistent with the label biodegradable – another way of asking how long it takes a biodegradable package to biodegrade.<sup>41</sup>

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<sup>39</sup> Both Dr. Stewart and Dr. Frederick likewise agreed that this was a flaw. ID 204, *see also* IDF 489, 492-93.

<sup>40</sup> As the ALJ correctly noted, ID 206-07, we identified the use of closed-end questions as a shortcoming in both the APCO and Synovate surveys in connection with our consideration of revisions to the Green Guides in 2012. *See* Statement of Basis and Purpose, Revised Green Guides 121 n.409, available at <https://www.ftc.gov/sites/default/files/attachments/press-releases/ftc-issues-revised-green-guides/greenguidesstatement.pdf>. At that time we also faulted the APCO and Synovate surveys for lacking control groups. *Id.* As discussed above, Dr. Frederick has addressed both of these shortcomings by using largely open-end questions to probe consumer expectations of biodegradation rates and by using control groups. *See supra* Section III.A.2.b.

<sup>41</sup> Dr. Frederick’s survey provides a rough estimate of the potential impact of this ambiguity. Question 1G, an exact duplicate of the APCO survey question, asked, “If a package is labeled ‘biodegradable,’ what should be the maximum amount of time that it should take for that package to decompose.” Eighty-nine percent of codeable

However, aside from concerns regarding the survey’s methodology, we do not believe that the APCO survey is properly designed to answer the central question at issue, which is what time period, if any, do consumers infer from a label of “biodegradable” on a plastic product. Question 4 of the APCO survey asks about biodegradation time for a “package” of unspecified material: consumers responding to the closed-ended question could have been providing answers pertaining to different types of material, such as paper, cardboard, styrofoam, or plastic. Further, there is no control question in the survey that sheds light on consumer belief regarding degradation times for packages not marked as “biodegradable.” Because of the lack of specificity in the question, in combination with the other concerns highlighted above, we do not consider the results of the APCO survey in deciding this case.

**e. The Synovate Survey**

Finally, a 2010 consumer survey conducted by the research firm Synovate included 2000 internet panel respondents and was commissioned by EcoLogic, a competitor of ECM, in connection with the Commission’s proposed revisions to the Green Guides. IDF 480-81. Like the APCO survey it was an observational study designed to probe consumer beliefs about biodegradation, including the time frames it requires.

In particular, Question 19 of the survey asked:

What do you believe is a reasonable amount of time for a ‘biodegradable’ plastic package to decompose in a landfill? Please select one:

Less than 1 year	25%
Less than 5 years	45%
Less than 10 years	17%
Less than 20 years	6%
Less than 40 years	3%
40 years or greater	4%

IDF 485-86.

Thus, 70% of respondents indicated that a reasonable amount of time for a *plastic* package labeled “biodegradable” to decompose in a landfill was less than 5 years. See CCX-860 App. at 50.

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responses (64% of all responses) were five years or less. Question 1H, which changed the question by substituting “would” for “should,” asked, “If a package is labeled ‘biodegradable,’ what would be the maximum amount of time that it would take for that package to biodegrade.?” Seventy-nine percent of codeable responses (53% of all responses) were five years or less. The difference is 10 or 11%. A deduction of this magnitude from the APCO result would still leave a majority of responses of four years or less.

The ALJ found the Synovate survey flawed for many of the same reasons as the APCO survey, again objecting to the closed-ended format, finding bias in the choice selection, and questioning whether the survey adequately probed whether the term “biodegradable” conveyed a message as to biodegradation rates. And he found fault with Question 19’s wording, suggesting that asking about a “reasonable amount of time” might have been interpreted as asking the respondent what he or she would like to happen rather than what he or she believed would occur. The ALJ also noted that, when it amended the Green Guides in 2012, the Commission had concluded that “reliable real-world conclusions cannot be drawn from the Synovate survey.” ID 204-08 (quoting Statement of Basis and Purpose, Revised Green Guides at 121). The ALJ therefore concluded that the Synovate survey, like the APCO survey, was of little if any probative value.

ECM urges us to reject the Synovate survey as invalid and unreliable. *See* RAnsB 24-25; RSuppB 1-2 & Exh. A (Stewart Dec.) ¶¶ 24-27.

For the purposes of assessing whether the term “biodegradable” implies a time period to consumers, we find the survey unreliable. The answers to Question 19 of the survey are potentially biased not only because of the closed-ended nature of the question (although the closed-ended options provided to respondents would actually favor longer periods of time), but also because of certain framing statements that were presented to participants. For instance, at the beginning of the survey, participants were informed that, “We are conducting a survey on behalf of a company that is striving to develop products that they believe will be helpful to the environment and will improve the ways that plastic products are disposed.” CCX-94 at 11. More importantly, Question 11 of the survey asked, “Did you know that traditional (non-biodegradable) plastic products take hundreds of years to decompose, if they do so at all?” *Id.* at 14. By providing a specific time period anchor for traditional plastic degradation and presenting the survey as sponsored by a company interested in improving plastic disposal and helping the environment, the survey design likely influenced answers to Question 19.

Therefore, we do not rely on the results of the Synovate survey to decide this case.

#### **f. Summary of Consumer Survey Evidence**

In determining how a significant minority of reasonable consumers would interpret the representation that ECM Plastics are “biodegradable,” we rely upon two consumer surveys, conducted at different times, by different parties, using different methodologies. Neither of the surveys is perfect. Because it specifically addresses plastic products, we find the Google Survey most useful, but the Stewart survey also contributes to our understanding. While ECM maintains that the survey results vary, *see, e.g.*, RSuppB 12, RSuppRB 8, both in fact point to the same bottom-line conclusion, that labeling a plastic product biodegradable conveys a message to at least a significant minority of reasonable consumers (and likely substantially more) that the item will decompose within five years.

In her statement, Commissioner Ohlhausen argues that the “key question ... is whether ECM’s unqualified claim *caused* reasonable consumers to believe that plastics treated” with the ECM Additive would biodegrade within a particular time period, and seems to imply that a claim may only be found deceptive if the ad meaning has been separated from consumers’ prior beliefs.

Partial Dissent at 2, 6. That is not the law. Indeed, the purpose of the Green Guides has been to alert marketers that consumers are reasonably confused about complicated scientific processes such as “biodegradability,” and that marketers can avoid liability by properly qualifying their claims to minimize misleading interpretations that stem from the use of unqualified environmental terms of art. In this case, ECM failed to properly qualify its claims. Regarding the narrow methodological question of how to analyze responses to consumer surveys, in some limited circumstances it is necessary to use control questions to account for preexisting consumer beliefs.<sup>42</sup> This is what the Commission has been able to do in its examination of experimental evidence from Dr. Frederick’s survey. Of course the Commission may consider many different types of evidence in determining ad meaning,<sup>43</sup> and there is no case law supporting Commissioner Ohlhausen’s suggestion that we must separate ad meaning from preexisting beliefs as a general matter.

Finally, Commissioner Ohlhausen incorrectly states that “[t]he FTC has never used extrinsic evidence of a ‘significant minority’ as a stand-alone basis to determine that a claim interpretation is reasonable.” Partial Dissent at 9. In fact, our analysis of Dr. Frederick’s survey results to determine the message reasonably conveyed to consumers by the term “biodegradable” is closely analogous to the approach the Commission used to determine the net impression of advertising in *Thompson Medical*, 104 F.T.C. at 802-08. In that case, the Commission could not conclude from facial analysis whether a certain set of ads conveyed an implied claim that Aspercreme contains aspirin. *Id.* at 803. The Commission then proceeded to examine the results of several consumer surveys. As we discussed above, in one survey where consumers were shown an Aspercreme television ad, 22.2% of respondents stated that Aspercreme contained aspirin, compared to only 6.3% and 4.8% who stated that aspirin was an ingredient in two competing products. *Id.* at 805; *see also supra* pp. 23-24. Based on these results, the Commission concluded that the ad shown to consumers “did, in fact, cause average viewers to believe that the product being described contains aspirin,” and that the survey results “clearly support[] the conclusion that [the ad at issue] generated a net impression of aspirin content among its viewers.” *Id.* at 805-06. The Commission also examined the results of another survey, where consumers were shown either an ad for Aspercreme or an ad for a competing product. *Id.*, at 806-08. When consumers who saw the Aspercreme ad were asked what ingredients the product contained according to the ad, a significantly larger number answered aspirin (17%) than salycyn (4%), when the latter was the actual active ingredient in the product. *Id.* at 807. Further, 38% of respondents who saw the Aspercreme ad believed that the advertised product contained aspirin, compared to 5% who viewed an ad for a competing product. *Id.*

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<sup>42</sup> *See Kraft*, 114 F.T.C. at 131 n.19 (rejecting evidence from a survey that used closed-ended questions because “no measures were used . . . to correct for pre-existing or inherent survey bias”); *but see Stouffer*, 118 F.T.C. at 809-11 (where any preexisting beliefs cut against the advertiser’s claim, there is no need to control for them, even in the case of closed-ended questions); *Telebrands Corp.*, 140 F.T.C. at 326 (because respondent’s intent was to exploit preexisting beliefs “deliberately by inviting consumers to recall the claims in other ads to help convey a message,” the results of controlled copy tests “likely understate the extent to which the challenged claims were communicated”); *cf. id.* at 318-19 (controls are unnecessary for open-ended questions).

<sup>43</sup> *See, e.g., Thompson Medical Co.*, 104 F.T.C. at 811-12 (discussing express claims); *Telebrands*, 140 F.T.C. at 304 (discussing intent evidence); *POM Wonderful*, 2013 WL 268926 at \*22-27 (discussing facial analysis); *Thompson Medical Co.*, 104 F.T.C. at 789-90 (discussing empirical evidence).



Based on these survey results, the Commission concluded that “the net impression conveyed by [the ad at issue] to at least one group of average listeners was that Aspercreme contains aspirin.” *Id.* at 808.<sup>44</sup>

Whether an ad conveys an implied claim is a question of fact, *POM Wonderful*, 2013 WL 268926, at \*27, citing *Removatron Int’l Corp. v. FTC*, 884 F.2d 1489, 1496 (1st Cir. 1989); *Nat’l Urological Grp.*, 645 F.Supp. 2d at 1189, and we have examined all of the evidence pertinent to that question. For the reasons explained above, based on our weighing of all the evidence, we find that at least a significant minority of reasonable consumers would interpret ECM’s unqualified representation that ECM Plastics are “biodegradable” to convey the claim that ECM Plastics fully biodegrade in landfills within a reasonably short period of time, *i.e.*, five years.<sup>45</sup>

### 3. ECM’s “Some Period Greater than a Year” Representation

As discussed above, after the Commission issued its revised Green Guides in October 2012, ECM began to omit the “9 months to 5 years” claim from its marketing materials, IDF 251-52, and utilize a “some period greater than a year” qualifier for its unqualified biodegradable claims:<sup>46</sup>

#### “BIODEGRADABLE\* PLASTICS QUALIFIER

\*Plastic products manufactured with ECM BioFilms’ additives will biodegrade in any biologically-active environment (including most landfills) in some period greater than a year.”

IDF 253; *see, e.g.*, CCX-20. ECM inserted this purported disclaimer where the word “biodegradable” appeared in its advertising. At this time, ECM also changed its logo, placing similar text beneath the word “Biodegradable” on its tree logo, IDF 256; *see* CCX-13, and its Certificate of Biodegradability. *See* IDF 270; CCX-14 (retaining the claim that ECM Plastics’ biodegradability had been “tested,” and the rate and extent of degradation determined, by “independent laboratories in accordance with standard test methods”).

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<sup>44</sup> In *Thompson Medical*, a significant minority reasonably took away a deceptive message – Aspercreme contains aspirin – but a clear majority took away a non-deceptive message – it does not contain aspirin. Here, there is even more reason for concern. As generally reflected in the responses to the Frederick survey, the majority of consumers shown a plastic product labeled “biodegradable” think the product will degrade within five years. In other words, this is not a case in which most consumers understand the claim to convey a true attribute of the product.

<sup>45</sup> Our determination about ECM’s implied claim relating to the biodegradability of plastics may raise certain broader issues about the Commission’s Green Guides. However, our sole role here is to address the limited issues presented by the parties’ respective appeals of the ALJ’s decision. The Commission will address any broader implications of our ruling at an appropriate, later time.

<sup>46</sup> As with the discussion of the unqualified biodegradable claim above, this analysis focuses on direct customers who were exposed *only* to the “some period greater than a year” claim and not the more specific nine months to five years claim. Many direct purchasers were provided with the express rate claim of nine months to five years, in addition to the “some period greater than a year” assertion, at some point prior to purchase. For those customers who saw the nine months to five years claim at any point in time, the net impression clearly would be that ECM Plastics would degrade within five years. *See supra* note 13.

In October 2012, ECM also notified its customers that they needed to qualify their “biodegradable” claims if the time frame of a year or less set out in the revised Green Guides did not “fit” their products. *See* IDF 261. For example, ECM sent its customers an e-mail that stated in part:

If you have evidence that your products with our additives will fully biodegrade in one year or less in the environment where it will be customarily disposed you may still make an unqualified claim of “biodegradable” for those products. But for most of our customers’ plastic products with our additives whose customary disposal is in a landfill, they will not be able to use that unqualified claim.

IDF 262; *see also* RX-35 through RX-37.

The ALJ found that ECM’s “some period greater than a year” claim would not convey to consumers the message that ECM Plastics biodegrade within a year. He did not consider more generally whether the claim would convey biodegradation within a reasonably short period of time.

Based on our own facial analysis of the marketing materials, in combination with the extrinsic evidence discussed below, we find that a reasonable interpretation of ECM’s representation that ECM Plastics biodegrade “in some period greater than a year” is that ECM Plastics biodegrade within a reasonably short period of time, *i.e.*, five years or less.<sup>47</sup>

#### **a. Facial Analysis**

The first step in our analysis is to determine what message the phrase would convey to a reasonable consumer based on the face of the representation. Taken literally, ECM’s claim would encompass any time period from one year and a day to thousands or even millions of years. However, if so interpreted, the claim would be essentially meaningless because almost everything degrades into elements found in nature given enough time.

We view the specific reference to “a year” as critical to interpreting the message that a reasonable consumer would likely take away from ECM’s claim. That is because of what is known as the “anchoring” effect of the one-year reference point. Anchoring effects have long been recognized by behavioral psychologists.<sup>48</sup> An anchor can be described as

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<sup>47</sup> Commissioner Ohlhausen agrees that ECM’s “in some period greater than a year” representation conveyed that ECM Plastics biodegrade within a reasonably short period of time. She bases this conclusion on the Commission’s facial analysis of that representation and on expert testimony regarding the anchoring effect. She finds the extrinsic consumer survey evidence too unreliable to be helpful in interpreting this claim, and does not rely on it.

<sup>48</sup> *See, e.g.*, Gretchen B. Chapman & Eric J. Johnson, *Anchoring, Activation, and the Construction of Values*, 79 ORGANIZATIONAL BEHAVIOR AND HUMAN DECISION PROCESSES 115 (1999); Karen E. Jacowitz & Daniel Kahneman, *Measures of Anchoring in Estimation Tasks*, 21 PERSONALITY AND SOC. PSYCHOL. BULL. 1161 (1995); Amos Tversky & Daniel Kahneman, *Judgment under Uncertainty: Heuristics and Biases*, 185 SCIENCE 1124, 1128 (1974).

an arbitrary value that the subject is caused to consider before making a numerical estimate. An anchoring effect is demonstrated by showing that the estimates of groups shown different anchors tend to remain close to these anchors.<sup>49</sup>

Anchoring effects have been observed in a variety of contexts – they have been highlighted by legal scholars,<sup>50</sup> acknowledged by courts and jurists,<sup>51</sup> and studied by the FTC.<sup>52</sup> As Dr. Frederick, Complaint Counsel’s consumer survey expert explained, in this case the “one year” functions as a numeric referent so that when consumers see “one year” they focus on that term and rely on it when making judgments of the overall message being conveyed. CCX-860 at 18 ¶ 41. Thus, for example, if ECM had stated “some period greater than a hundred years” the message conveyed would be far different than that conveyed by “some period greater than a year.” Whereas a reasonable consumer would focus on the “hundred years” as suggesting that biodegradation would take a long period of time, the reference to “a year” conveys the message that the time for biodegradation will be reasonably short – perhaps longer than a year, but not a lot longer.

Dr. Frederick is an authority on the effects of “anchoring” on consumer perceptions, having authored a number of peer-reviewed articles on the subject. *See* CCX-860 at 22-24. Yet the ALJ dismissed the anchoring concept out-of-hand. Instead, he relied on his own literal reading of ECM’s representation, without giving any consideration to the anchoring effect of the one-year reference on the net impression ECM’s representation would convey to a reasonable consumer. That was error.

Here we find that the net impression created by ECM’s representation is that ECM Plastics will biodegrade within a reasonably short period of time, anchored around one year. *See, e.g., FTC v. Cyberspace.com LLC*, 453 F.3d 1196, 1200 (9th Cir. 2006) (“A solicitation may be likely to mislead by virtue of the net impression it creates even though the solicitation also contains truthful disclosures.”); *FTC v. AMG Services, Inc.*, 29 F. Supp.3d 1338, 1349 (D. Nev. 2014) (“[T]he Court considers “the overall, common sense ‘net impression’ of the representation

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<sup>49</sup> Jacowitz & Kahneman, *supra* note 48, at 1161.

<sup>50</sup> *See, e.g.,* Jeffrey J. Rachlinski *et al.*, *Can Judges Make Reliable Numeric Judgments? Distorted Damages and Skewed Sentences*, 90 IND. L. J. 695 (2015); Debra Pogrud Star & Jessica M. Choplin, *A Cognitive and Social Psychological Analysis of Disclosure Laws and Call for Mortgage Counseling to Prevent Predatory Lending*, 16 PSYCHOL. PUB. POL’Y & L., 85, 100 (2010); Jon D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: The Problem of Market Manipulation*, 74 N.Y.U. L. REV. 630, 667-69 (1999).

<sup>51</sup> *See, e.g., United States v. Ingram*, 721 F.3d 35, 40-41(2d Cir. 2013) (Calabresi, J., concurring); *Diaz-Pena v. Warden, Federal Correctional Institution, Fort Dix, New Jersey*, 586 F.Supp. 2d 1, 3-4 (D. Mass. 2008); Mark W. Bennett, *Confronting Cognitive “Anchoring Effect” and “Blind Spot” Biases in Federal Sentencing: A Modest Solution for Reforming A Fundamental Flaw*, 104 J. CRIM. L. & CRIMINOLOGY 489 (2014) (article by Federal District Court Judge for the Northern District of Iowa).

<sup>52</sup> *See generally* Manaj Hastok & Dennis Murphy, *Effects of Bristol Windows Advertisement with an “Up To” Savings Claim on Consumer Take-Away and Beliefs* (May 2012) (FTC-commissioned study indicating that when marketers use the phrase “up to” in claims about their products, many consumers are likely to believe that they will achieve the maximum “up to” benefits), *at*

<https://www.ftc.gov/sites/default/files/documents/reports/effects-bristol-windows-advertisement-savings-claim-consumer-take-away-beliefs/120629bristolwindowsreport.pdf>.

or act as a whole to determine whether it is misleading, and a Section 5 violation may still be found even if the fine print and legalese were technically accurate and complete.”); *National Urological Grp.*, 645 F. Supp. 2d at 1189 (“When assessing the meaning and representations conveyed by an advertisement, the court must look to the advertisement’s overall, net impression rather than the literal truth or falsity of the words in the advertisement.”). Our interpretation of the claim does not contradict the plain text of the representation. The anchoring effect means that the “some period greater than a year” representation conveyed to consumers that biodegradation will be reasonably short – perhaps longer than a year, but not a lot longer.

### **b. The Extrinsic Evidence**

Extrinsic evidence – namely, the Frederick and Stewart surveys – corroborates our interpretation.<sup>53</sup> Although the two surveys employed different methodologies and posed different questions, both point to the same conclusion as to how consumers would interpret the “some period greater than a year” language.

Question 5b of Dr. Stewart’s survey asked:

“Plastic products manufactured with our additives will biodegrade in any biologically-active environment (including most landfills) in some period greater than a year.” In your own words, what does this claim mean to you?

RX-856 App. B at 20 (RX-847). Twenty-four percent of the respondents to this question answered that the plastic product would be “Gone/decomposed/biodegrade in one year.” RX-856 App. D (RX-846) at 26. This supports our analysis that when viewing ECM’s representation that a plastic product will biodegrade in some period greater than a year, a significant minority of reasonable consumers will focus on the numerical reference point – the one year – and ignore or discount the “greater than” language. In other words, the answers to Question 5b provide corroborating empirical evidence of an anchoring effect.<sup>54</sup>

Dr. Frederick’s Google Survey also asked respondents to react to a plastic package’s claim of biodegradability in “some period greater than a year.” Specifically, Question 3R asked:

Suppose a plastic package is labeled biodegradable, and is claimed to biodegrade in “*some period greater than a year.*” What is your best estimate of the amount of time it will take to biodegrade?

CCX-860 App. at 35. Fifty-four percent of the survey respondents who provided a codeable time period in response believed that a plastic package bearing the claim “in some period greater than a year” will biodegrade in five years or less. CCX-860 at 1 & App. at 35. Twenty-three

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<sup>53</sup> As noted above, Commissioner Ohlhausen does not find the extrinsic evidence reliable enough to provide any useful information about consumer interpretations of this claim.

<sup>54</sup> ECM argues that reliance on responses to individual questions in Dr. Stewart’s survey is “selective” and “improper.” RAnsB 20-21; *see also* RSuppB 11. ECM also made this point with reference to responses to a different question in the Stewart survey, and we addressed this criticism *supra* in Section III.A.2.c.

percent of these respondents provided answers that clustered close to the one-year point of reference – *i.e.*, one year to two years.<sup>55</sup> Dr. Frederick’s survey also asked in four different ways whether the respondents believed a package claimed to biodegrade “in 9 months to 5 years” would biodegrade in a longer or shorter time period than one claimed to biodegrade “in some period greater than a year.” The survey respondents understood both phrases to imply much the same thing about the amount of time needed for biodegradation. *See* CCX-860, App. at 45.<sup>56</sup>

In sum, both Dr. Stewart’s survey and Dr. Frederick’s survey point in the same direction: at least a significant minority of respondents in the Stewart survey and a majority of respondents in the Frederick survey stated that if a plastic product was claimed to biodegrade “in some period greater than a year,” they believed the product would decompose in less than five years.

Our facial analysis and this extrinsic evidence support the finding that ECM’s representation – that ECM Plastics biodegrade “in some period greater than a year” – conveys the implied claim to reasonable consumers that ECM Plastics fully biodegrade in landfills within a reasonably short period of time, *i.e.*, a period close to a year and no more than five years.

## **B. ECM’s Claims are False and Unsubstantiated**

Having established that the language in ECM’s materials conveys the claims that ECM Plastics are fully biodegradable in landfills in nine months to five years; that ECM Plastics will completely decompose within a reasonably short period of time, *i.e.*, within five years, including within a landfill; and that scientific tests, including ASTM D5511, show ECM’s claims of efficacy, we turn to whether such claims are false or likely to mislead. In doing so, we distinguish between efficacy claims and establishment claims. *See, e.g., Thompson Med. Co. v. FTC*, 791 F.2d 189, 194 (D.C. Cir. 1986). Efficacy claims suggest that a product successfully performs the advertised function or yields the advertised benefit, but do not include a suggestion regarding the level or type of proof of the product’s effectiveness. *See id.*; *Removatron Int’l Corp.*, 884 F.2d at 1492 n.3. Establishment claims suggest a certain type or level of support for the advertised function or effectiveness. *See Thompson Med. Co.*, 791 F.2d at 194. Here, as described above, ECM made both efficacy and establishment claims.

Claims may be found misleading under either of two distinct analytical routes. Claims may be misleading if they lack a reasonable basis or if they are false. Because an objective claim about a product’s performance or efficacy carries with it the express or implied representation that the advertiser had a reasonable basis to substantiate the claim, failure to have a reasonable basis is misleading. *See POM Wonderful*, 777 F.3d at 490 (“If an ad conveys an efficacy claim,

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<sup>55</sup> *Cf.* CCX-860 at 18 (reporting the number as 20 percent, an apparent typographical error). Either figure, however, would suggest an anchoring effect. *See id.* ECM takes issue with the methodology of Dr. Frederick’s survey and challenges its validity. We discussed these issues *supra* in Section III.A.2.b.

<sup>56</sup> Questions 14A and 14B asked “Which package do you think will take longer to biodegrade?” Sixty percent of respondents chose the package that biodegrades in “some period greater than a year” rather than the package that biodegrades in “9 months to 5 years” when the former choice was listed first; forty percent chose that package when that choice appeared second. Questions 14C and 14D asked “Which package do you think will biodegrade more quickly?” Fifty percent chose the package that biodegrades in “some period greater than a year” when that choice was listed first; forty percent chose that package when the choice appeared second.

the advertiser must possess a ‘reasonable basis’ for the claim.”); *FTC Policy Statement Regarding Advertising Substantiation*, appended to *Thompson Med. Co.*, 104 F.T.C. 648, 839 (1984) (“*Substantiation Statement*”); *Thompson Med. Co.*, 104 F.T.C. at 813 n.37, 819. For establishment claims, when an advertiser represents that there is a particular level of support, the absence of that support makes the claim false.

## 1. Unappealed Findings and Consensus Among Experts

Evaluating substantiation usually requires that we determine whether the tests that a respondent identifies meet the level or standard of substantiation required to support the claims. Here, however, even without a detailed evaluation of the tests, the unappealed findings of the Initial Decision and the clear consensus among both parties’ experts enables us to conclude that ECM lacks substantiation for its express and implied claims that ECM Plastics fully biodegrade in landfills within 5 years.

The ALJ ruled that ECM’s express efficacy and establishment claims that ECM Plastics fully biodegrade in a landfill in nine months to five years “are both false and unsubstantiated.” ID 246, 318. Although ECM has appealed whether these claims are material, ECM has not appealed the ALJ’s conclusion that the claims are both false and unsubstantiated.<sup>57</sup> Because ECM’s implied claims similarly convey that ECM Plastics biodegrade completely in a landfill within 5 years,<sup>58</sup> a finding that these implied claims are false and unsubstantiated follows directly from the ALJ’s unappealed ruling.

Moreover, as the ALJ explained, “All of the experts in this case agreed that ECM Plastics do not fully biodegrade in 9 month to 5 years in a landfill.” ID 246. Complaint Counsel’s polymer engineering expert, Dr. McCarthy, opined that ECM Plastics will not fully biodegrade in nine months to five years in a landfill. IDF 698 (citing CCX-891 at 26 (McCarthy Expert Report) (“claims that ECM Plastic will completely biodegrade in periods of time as short as five years cannot be true”)). Similarly, Dr. Michel stated that “it has not been demonstrated that ECM amended conventional plastics will biodegrade in a landfill in 1 to 5 years.” CCX-895 at 12; IDF 700. Even ECM’s expert admits that “the expectation that all plastics with the ECM additive added in the usual amount (i.e., at a level of 1 or at most a few percent) should completely . . . degrade in typical landfill conditions, in a time period of 1 year or even 5 years, is unrealistic.” RX-855 at 8 (Sahu Expert Report); IDF 701.

Similarly, landfill experts for both parties explained that ECM Plastics would not biodegrade fully in landfills within five years. Dr. Tolaymat, Complaint Counsel’s expert, testified that ECM Plastics would not biodegrade fully in nine months to five years. IDF 699 (citing Tolaymat, Tr. 121-22 (explaining that even the most biodegradable material would not completely biodegrade in a landfill within five years even under optimum conditions); *see also*

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<sup>57</sup> Commission Rule 3.51(b) provides, “Any objection to a ruling by the Administrative Law Judge, or to a finding, conclusion or a provision of the order in the initial decision, which is not made a part of an appeal to the Commission shall be deemed to have been waived.” 16 C.F.R. § 3.51(b).

<sup>58</sup> Commissioner Ohlhausen dissents from this finding with regard to the unqualified biodegradable claim. *See supra* note 1. As such, she offers no opinion as to the truthfulness or substantiation of that alleged implied claim.

CCX-893 at 6 (even “leaves and food scraps take many years” to degrade in landfills), 16, 23-24. ECM’s landfill expert had a similar opinion. Dr. Barlaz explained that “the suggestion that all materials should biodegrade within one or even five years of disposal is not consistent with even the highest rates of biodegradation expected for mixed MSW [municipal solid waste].” RX-853 at 3 (Barlaz Expert Report); *see also* IDF 702; Barlaz, Tr. 2292-97 (even food waste takes slightly under five years for 87.5% biodegradation under “accelerated” conditions). Dr. Barlaz also testified that he had not seen any data that demonstrates that ECM Plastics will fully biodegrade in nine months to five years. CCX-943 at 46 (Barlaz Dep. at 180).

The ALJ’s unappealed findings and the substantial agreement among the expert witnesses provide sufficient basis for finding that ECM lacks a reasonable basis for its express and implied efficacy and establishment claims and for deeming its claims false and unsubstantiated.

## **2. Analysis of Tests Offered as Substantiation Confirms the Experts’ Conclusions**

Review of the specific substantiation evidence in the record confirms these conclusions. In this section we apply a traditional analysis of the substantiation issues presented and conclude, again, that ECM lacks a reasonable basis for its claims and that those claims are false and unsubstantiated. The inquiry is much more detailed, but the result is the same.

### **a. Factual Background**

Many of the substantiation issues here involve laboratory tests and their relationship to landfill conditions. Landfills provide the principal option for addressing municipal solid waste (MSW) in the United States. IDF 566. Most landfills in the United States are required by federal regulations to operate with oxygen content below 5%; thus, landfill environments are predominantly anaerobic. IDF 579. Temperatures in MSW landfills in the United States range between 20 and 40 degrees Celsius (between 68 and 104 degrees Fahrenheit), but average around 37 degrees Celsius. CCX-893 at 12 (Tolaymat Expert Report); Barlaz, Tr. 2208-09 (37 to 40 degrees Celsius is typical). Without the active addition of moisture, the typical moisture content of U.S. landfills is limited, between 15% and 30%. IDF 590.

Biodegradation is a biological process by which microorganisms such as bacteria and fungi use the carbon found in organic material as a food source. ID 226. As a result of that biological process, the organic material undergoes a change in chemical structure and loses some properties. *Id.* at 228. Biodegradation in an anaerobic environment, *i.e.*, a landfill, produces methane and carbon dioxide as end products. RX-853 at 4 (Barlaz Expert Report).

Many of the tests at issue for substantiation purposes analyze biodegradation issues in terms of the end products produced in a laboratory setting. In gas evolution tests, the end-products of biodegradation are detected and measured to provide evidence that biodegradation has occurred. The basic methodology of an anaerobic gas evolution test is to expose a sample of the test material to a source of bacteria (“inoculum,” such as well-decomposed refuse), and the resulting biogases (methane and carbon dioxide) are measured. The test article, a positive control (such as cellulose that is known to be biodegradable), a negative control (such as conventional plastic, which is generally considered a product known to biodegrade, only over

very long periods of time), and an inoculum blank are simultaneously tested and the resulting biogases for each are collected. The lab compares the gases produced by the inoculum blank to the gases produced by the test article and the negative control to determine if the test article biodegrades. The lab can calculate the percentage of biodegradation of the test article by comparing the net level of gases attributable to the test sample with the theoretical maximum yield of gases from the sample, calculated from the known chemical makeup and amount of the product. IDF 743-49, 763-68.

One type of gas evolution test uses the ASTM D5511 methodology, the Standard Test Method for Determining Anaerobic Biodegradation of Plastic Materials Under High-Solids Anaerobic Digestion Conditions. *See* CCX-84. The method is a laboratory-scale reactor test performed in a high-solids environment, which is more representative of the matrix in landfills than some other test methods. IDF 760-62. However, water is added to the system and the pH of the liquids is monitored and adjusted, IDF 763, so these particular conditions differ from a typical landfill. The ASTM D5511 test is incubated at a temperature of 52 degrees Celsius, IDF 781-84, whereas the average temperature of a typical landfill in the United States is 37 degrees Celsius. IDF 577. The increased moisture content, adjusted pH, and increased temperature relative to typical landfill conditions are intended to accelerate in a lab the natural process of biodegradation. IDF 717-20, 731.<sup>59</sup>

#### **b. Legal Framework**

To determine whether challenged claims are false or misleading, we conduct two inquiries. First, we determine what level of substantiation respondents were required to have for their advertising claims. This is a question of fact, based on the evidence adduced at trial. *FTC v. QT, Inc.*, 448 F. Supp. 2d 908, 959 (N.D. Ill. 2006). For efficacy claims, the appropriate level of substantiation is determined by weighing the *Pfizer* factors. *See Pfizer Inc.*, 81 F.T.C. 23 (1972). *Pfizer* requires weighing the following factors: (1) the product involved; (2) the type of claim; (3) the benefits of a truthful claim; (4) the ease of developing substantiation for the claim; (5) the consequences of a false claim; and (6) the amount of substantiation experts in the field would agree is reasonable. *See Substantiation Statement*, 104 F.T.C. at 840; *Removatron Int'l Corp.*, 111 F.T.C. at 306 n.20; *Thompson Med. Co.*, 104 F.T.C. at 821. The analysis is not a simple tallying of the number of factors that demand higher or lower levels of substantiation; rather, it is a flexible application that considers the interplay of the identified factors. *See Pfizer*, 81 F.T.C. at 64. For establishment claims, the *Pfizer* factors are unnecessary; the advertiser is held to whatever level of substantiation is represented in the materials. *See, e.g., POM Wonderful*, 777 F.3d at 491.

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<sup>59</sup> Biochemical methane potential (BMP) tests are also gas evolution tests, but they are performed in small vials (rather than laboratory-scale reactors) and conducted at much higher moisture levels than those in ASTM D5511 tests. There are no standards for BMP tests, and individual laboratories modify the tests, at times adding vitamins and minerals, changing temperatures, or changing the test's duration. IDF 750-54. BMP tests may be used for screening purposes to determine whether biodegradation of the material is possible, but BMP tests are not used to establish rate data, and the actual volume of methane generated in a landfill may well be less than what is shown by a BMP test. IDF 755-57.



After determining the level of substantiation the advertiser must have, the second inquiry asks whether respondents possessed that level of substantiation. Respondents have the burden of establishing on what substantiation they relied. Complaint Counsel have the burden of proving that respondents' purported substantiation was inadequate. *See, e.g., QT*, 448 F. Supp. 2d at 959.

### **c. The Required Level of Substantiation**

ECM must provide substantiation for the claims that it makes. Here, we have found that ECM has made representations that convey the claims that ECM Plastics will completely biodegrade in a landfill within 5 years and that scientific tests show this. ECM must have substantiation for its claims. *See Substantiation Statement*, 104 F.T.C. at 840 (stating that firms "should generally be aware of reasonable interpretations and will be expected to have prior substantiation for such claims"). The ALJ's analysis of substantiation for a different claim – that ECM Plastics are "intrinsically biodegradable," a view of biodegradability in which time is irrelevant – does not dispose of the question before us. Similarly, evidence that the scientific community expects the material to fully decompose in some less clearly defined time period beyond five years is unavailing.

Our first step is to determine the level of substantiation ECM is required to have. We perform separate inquiries for establishment claims and efficacy claims.

### **i. Establishment Claims**

When "ads contain express or implied statements regarding the amount of support the advertiser has for the product claim . . . , the advertiser must possess the amount and type of substantiation the ad actually communicates to consumers." *Substantiation Statement*, 104 F.T.C. at 839. "If an establishment claim 'states a specific type of substantiation,' the 'advertiser must possess the specific substantiation.'" *POM Wonderful*, 777 F.3d at 491 (quoting *Removatron*, 884 F.2d at 1492 n.3). If an ad instead conveys a nonspecific establishment claim, such as a suggestion that the claim is based on scientific evidence, then "the advertiser 'must possess evidence sufficient to satisfy the relevant scientific community of the claim's truth.'" *POM Wonderful*, 777 F.3d at 491 (quoting *Bristol-Myers Co.*, 102 F.T.C. 21, 321 (1983), *aff'd*, 738 F.2d 554 (2d Cir. 1984)); *see also Removatron Int'l Corp.*, 111 F.T.C. at 297; *Thompson Med. Co.*, 104 F.T.C. at 821-22 n.59.

Here, ECM represents that ECM Plastics have been shown to be fully biodegradable, biodegradable in a landfill, or biodegradable in a stated qualified time frame under various scientific tests including, but not limited to ASTM D5511. Thus, ECM makes both specific establishment claims, which identify tests using the ASTM D5511 methodology,<sup>60</sup> and

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<sup>60</sup> *See, e.g., CCX-14* (ECM Certificate of Biodegradability stating that ECM Plastics have been "tested by independent laboratories in accordance with standard test methods approved by ASTM" and other standardization bodies "to determine the rate and extent of biodegradation of plastic materials"; that the results of such testing are contained in an ecological assessment report that "certifies that plastic products manufactured with ECM additives can be marketed as biodegradable"; and that ECM Plastics will biodegrade in "most landfills" "in some period greater than a year"); *CCX-20* at 14 (ECM website stating "Material treated with ECM has been tested and proved as biodegradable . . . by using . . . ASTM 5511," explaining that this means that "[p]lastic products made with our

nonspecific establishment claims. For the specific establishment claims, ASTM D5511 tests must prove ECM's claims. For the nonspecific claims, ECM must possess evidence that would satisfy the relevant scientific community of the claim's truth. As Judge Chappell found, the scientific community would "require[] the results of appropriately analyzed, independent, well-designed, well-conducted, and well-controlled testing." IDF 705; *see also* IDF 704; CCX-891 at 13 ("The testing should use the appropriate plastic application, load rate, inoculum, test conditions, and sample weight, over an appropriate duration of time."), 14-18.

## ii. Efficacy Claims

For ECM's efficacy claims, we apply the *Pfizer* factors to determine the level of substantiation that ECM must possess. Applying those factors leads us to conclude that the efficacy claims regarding the biodegradability of ECM Plastics demand competent and reliable scientific evidence, which is similar to the level of substantiation necessary to substantiate ECM's nonspecific establishment claims.<sup>61</sup>

The first factor is the type of claim. ECM made claims regarding the biodegradability of ECM Plastic. The Commission has previously stated in general terms that the substantiation standard for environmental marketing claims, including biodegradability claims, often requires "competent and reliable scientific evidence." FTC Green Guides, 16 C.F.R. § 260.2 (2012). Competent and reliable scientific evidence "consists of tests, analyses, research, or studies that have been conducted and evaluated in an objective manner by qualified persons and are generally accepted in the profession to yield accurate and reliable results." *Id.* Such a standard is consistent with prior cases that have determined that "claims whose truth or falsity would be difficult or impossible for consumers to evaluate by themselves" require a high level of substantiation. *See Removatron Int'l Corp.*, 111 F.T.C. at 306 n.20; *Thompson Med. Co.*, 104 F.T.C. at 822.

The second *Pfizer* factor is the type of product. Plastics are used by all consumers and also comprise a significant portion of municipal solid waste. Consequently, for consumers who are concerned about the environment, claims about plastic would be of particular importance, which suggests a need for a high level of substantiation.

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ECM BioFilm's additives will biodegrade in any biologically-active environment (including most landfills) in some period greater than a year," and adding, "This process continues until all the plastic is fully biodegraded").

<sup>61</sup> Although we conclude that ECM's efficacy and establishment claims require the same level of substantiation, we do not adopt the ALJ's analysis that led him to a similar conclusion. The ALJ concluded that all of ECM's materials make establishment claims: he found that "[t]he net impression of ECM's [materials] . . . is that ECM Plastics are biodegradable and that testing by independent laboratories proves that ECM Plastics are biodegradable." ID 237. We disagree. Some of ECM's materials make its biodegradable claims from presentations as simple as a logo consisting of a tree and the words "ECM Biodegradable." We do not find that such materials convey a claim that testing by independent labs prove that ECM Plastics are biodegradable. Not "every reference to a test necessarily gives rise to an establishment claim," *Bristol-Myers Co.*, 102 F.T.C. at 321 n.7, and ads in this case that make no reference to any level of support do not convey establishment claims. In fact, in *Thompson Medical*, the Commission expressly recognized the need to conduct a separate analysis for a subset of ads that did not specify the level of support for the claims. *Thompson Med. Co.*, 104 F.T.C. at 821 n.59.

The third factor is the benefit of a truthful claim. The fourth factor is the ease of developing substantiation for the claim. We often consider these factors in tandem. Our concern in analyzing these factors is to ensure that the level of substantiation we require is not likely to prevent consumers from receiving potentially valuable information about product characteristics. *See Thompson Med. Co.*, 104 F.T.C. at 823.

Here, the benefit of truthful claims is that consumers would act on appropriate and accurate information, choosing products destined for landfill disposal rather than recycling, in keeping with their environmental concerns. Although precise information linking laboratory tests to landfill biodegradation rates is not easily acquired, the science of biodegradation testing is clear, and information, within laboratory testing's limitations, can be gathered without great expense. These factors inject a modest note of caution against undue substantiation requirements. Nonetheless, difficulty developing substantiation does not excuse claims that go beyond what can be substantiated; the claims should be qualified or limited to reflect the limitations of the testing. *See POM Wonderful*, 2013 WL 268926, at \*50.

The fifth factor involves the consequences of a false claim. Here, false claims are likely to harm consumers by inducing purchases of higher-priced plastics that purportedly are biodegradable instead of conventional plastic. *See Thompson Med. Co.*, 104 F.T.C. at 824 (significant economic harm “result[s] from the repeated purchase of an ineffective product by consumers who are unable to evaluate” the efficacy claims). And, again, the choice between directing products to landfills and recycling will be distorted by false biodegradation claims. These considerations support a high level of substantiation.

The sixth and final factor is the amount of substantiation experts in the field would agree is reasonable. As noted above, experts in the field would expect competent and reliable scientific evidence to support claims regarding biodegradability. Moreover, they would expect well-designed, well-conducted tests with statistically significant, well-analyzed results.

Based upon our review of the six *Pfizer* factors, we conclude that the proper level of substantiation for ECM's biodegradable efficacy claims is competent and reliable scientific evidence. This is consistent with the expectations of both parties. *See* ID 237 (“In the instant case, the parties agree that, applying the *Pfizer* factors, the appropriate level of substantiation for Respondent's claims is ‘competent and reliable scientific evidence.’”). As the ALJ explained, such evidence “means ‘tests, analyses, research, studies, or other evidence based on the expertise of professionals in the relevant area, that have been conducted and evaluated in an objective manner by persons qualified to do so, using procedures generally accepted in the profession to yield accurate and reliable results.’” *Id.* at 238 (quoting *POM Wonderful*, 2013 WL 268926, at \*48).

#### **d. The Substantiation Possessed by ECM**

Having determined the levels of substantiation required for ECM's claims – ASTM D5511 substantiation for its specific establishment claims and competent and reliable scientific evidence for its non-specific claims – the remaining step is to inquire whether ECM possesses those levels of substantiation. We examine each issue in turn.

**i. ECM’s Specific Establishment Claims – that ATSM D5511 Tests Prove ECM Plastics Biodegrade Completely in Landfills within Five Years – are False**

Although ECM asserts that ASTM D5511 tests substantiate its claims, ASTM, the organization that established the test methodology, instructs that ASTM D5511 test results should not be used in the manner that ECM employs. ASTM advises that an ASTM D5511 test does not substantiate an unqualified biodegradability claim. The test protocol expressly states: “Claims of performance shall . . . not be used for unqualified ‘biodegradable’ claims.” CCX-84 at 1 (ASTM D5511 §1.4). Results may not be supplemented or adapted to better suit marketing strategies or applied generally to landfills;<sup>62</sup> rather, “Claims of performance shall be limited to the numerical result obtained in the test . . . .” *Id.* “Furthermore,” the protocol continues, “results shall not be extrapolated past the actual duration of the test.” *Id.* If ECM’s ASTM D5511 test results are not extrapolated, *e.g.*, using test results that show 2% biodegradation in 30 days to imply 100% biodegradation in 1500 days, the tests do not support a claim that ECM Plastics fully biodegrade.

ECM personnel have suggested that the limitations ASTM places on the use of ASTM D5511 test results apply only to scientific test reports and that results can be extrapolated when they are presented to purchasers. *See* Sinclair, Tr. 1683-84. We disagree. The ASTM protocol addresses “[c]laims of performance,” a limitation much more suggestive of marketing efforts than laboratory presentations to test sponsors. Moreover, the experts in this case do not believe the limitations of the ASTM D5511 protocol can be ignored. Dr. McCarthy explained that ASTM D5511 tests can be used as a screening level test, but cannot provide support that a biodegradable plastic will biodegrade to completion. CCX-891 at 21. Similarly, ECM’s expert, Dr. Barlaz, opined that ASTM D5511 is designed only to measure “intrinsic biodegradability,” RX-853 at 8; *see also id.* at 10 (“there is not a uniformly utilized method to extrapolate rate data as measured at laboratory-scale to field-scale landfills”). Dr. Sahu, another ECM expert, also testified that from his review of peer-reviewed literature and his experience, he had not seen a study that extrapolated a rate from a test to determine a time for complete biodegradation. IDF 714-15. Indeed, at oral argument, counsel for ECM agreed that ASTM D5511 tests do not permit extrapolations on biodegradation rates. Tr. Oral Arg. 20.

ECM argues that Complaint Counsel have not identified a test methodology that would provide scientific evidence sufficient to support claims that ECM Plastics biodegrade fully in landfills within a specific period of time. RAnsB 51; Tr. Oral Arg. 20. Similarly, the ALJ concludes that no one test can support a rate of biodegradation of plastics in landfills. ID 239-40. This misses the point. Substantiation requirements are not static; they are driven by the specific claim that an advertiser chooses to make. Here, ECM tells its customers that the ASTM D5511 test (and particular aerobic tests) “determine the rate and extent of biodegradation of plastic materials” and show ECM Plastics will biodegrade in most landfills. *See, e.g.*, CCX-14.

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<sup>62</sup>ASTM’s protocol suggests potential applicability only to “some conditions in biologically active landfills where . . . biogas production is actively promoted by inoculation (for example, codeposition of anaerobic sewage sludge, anaerobic leachate recirculation), moisture control (for example, leachate recirculation), and temperature control (for example, short-term injection of oxygen, heating of recirculated leachate).” CCX-84 at 1.

ECM is presenting tests and test results that do not support its claims. An advertiser is not given license to make particular claims that go beyond the substantiation it possesses and then ask the Commission to excuse the inadequacy of its support by asserting that the advertiser did the best it could because the proper substantiation for the actual claim would be unavailable. *See POM Wonderful*, 777 F.3d at 496-97 (rejecting argument that substantiation requirement of randomized clinical trials for disease claims was “too onerous” because of “practical, ethical, and economic constraints” and recognizing that the level of required substantiation required was driven by the nature of the claims the advertiser chose to make). Rather, where there are constraints on the available substantiation, “the advertiser must generally limit the claims it makes for its data or make appropriate disclosures to insure proper consumer understanding.” *Kroger Co.*, 98 F.T.C. 639, 737 (1981).

**ii. ECM Does Not Possess the Competent and Reliable Scientific Evidence Needed to Substantiate its Claims**

To support its position that its claims are substantiated with the requisite science, ECM first describes the mechanism through which its additive purportedly alters conventional plastic and accelerates biodegradation. Then ECM identifies test results that it contends substantiate its claims.

**Mechanism of Operation:** ECM argues that the ECM Additive attracts microbes and other microorganisms to areas on and within the plastic where the additive is located. RX-855 at 27-28 (Sahu Expert Report); RX-854 at 21-23 (Burnette Expert Report). According to ECM, this fosters the formation of biofilms (a group of microorganisms that stick together on a surface) near the additive sites, which promote the growth of bacteria that metabolize both the additive and the conventional plastic into which it is integrated. *Id.* ECM maintains that the additive may weaken the carbon-carbon bonds of the plastic, RX-854 at 22, or introduce additional weak points, thereby enabling the microorganisms to break down the high-molecular-weight conventional plastic. RX-855 at 17-18, 27. Based on this analysis, the ALJ found that inclusion of the ECM Additive contributes to the acceleration of biodegradation. *See* IDF 910-11, 917-18, 935.

However, there are important limits on ECM’s presentation and considerable contrary evidence. Evidence of the ECM Additive’s mechanism of action comes from ECM’s expert, Dr. Sahu. Yet, by his own admission, Dr. Sahu did not analyze or conduct tests on ECM Plastic. Sahu, Tr. 1952.<sup>63</sup> Dr. Sahu’s opinion about the mechanism of action for the ECM Additive is based only on a review of the published literature. *See* RX-855 at 28 (“Some variant of this overall mechanism . . . is widely reported in the literature . . . .”); *see also id.* at 24-40. But that literature does not address the ECM Additive, and the only peer-reviewed article discussing plastic amended with the ECM Additive,<sup>64</sup> is not cited in this portion of Dr. Sahu’s opinion. Indeed, the literature that Dr. Sahu claims to describe ECM’s method of action only describes the

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<sup>63</sup> Similarly, Dr. Burnette, ECM’s microbiology expert, did not specifically study or analyze the ECM Additive or ECM Plastic. Burnette, Tr. 2448-49.

<sup>64</sup> *See* CCX-895 at 13 (Michel Expert Report) (stating that an article by E.F. Gomez and F.C. Michel is the only peer-reviewed scientific publication to report on the biodegradation of ECM amended plastic).

formation of biofilms and the ingestion of the material by microbes that occurs whenever *any* product biodegrades. Moreover, the particular articles cited by Dr. Sahu to support his opinion that conventional plastic can be biodegradable only discuss plastics with structural types known to be biodegradable or that have been pretreated or that are treated in specialized environments. *See* CCX-892 (McCarthy Rebuttal Expert Report) at 5 n.3 (1978 study by Albertson was conducted in a super-oxygenated environment, which is unlike landfills), 6 (articles by Tilstra & Johnsonbaugh and Shah discuss plastics with molecular structures known to be similar to biodegradable polymers), 6-7 (Tokiwa article discusses biodegradability of low-molecular-weight plastic), 7 (Shah article concludes polyethylene can be degraded only following “photodegradation and/or chemical degradation”). In short, the articles cited by Dr. Sahu do not address, under customary disposal conditions, the conventional, high-molecular-weight plastics that resist biodegradation and that are the plastics ECM claims its additive will alter to become biodegradable.

Moreover, other evidence raises troubling questions regarding the purported mechanism of action. While the experts agreed that the ECM Additive is biodegradable and that microorganisms gather and ingest the additive when an ECM Plastic is disposed of, questions remain regarding the subsequent steps. Formation of a biofilm – a key step in ECM’s claimed mechanism of action – is not necessarily an indication of degradation of the plastic.<sup>65</sup> Even ECM expert, Dr. Burnette, distinguished between forming a biofilm and degrading the material. *See* Burnette, Tr. 2453-57 (explaining that his references only address biofilm formation and do not address whether the microorganisms are using the plastic as a food source). The ALJ accepted that the formation of biofilms resulted in biodegradation of the plastic, *see* IDF 913, but formation of biofilms does not amount to competent scientific evidence that the ECM Additive actually promotes biodegradation of conventional plastics.

**Laboratory Tests:** Experts testified that gas evolution tests are the most practical and widely used scientific tests of biodegradation. If they are appropriately designed, conducted, and controlled, they can provide competent and reliable evidence of biodegradation. IDF 743, 748.

The record in this case includes reports or descriptions of 44 tests of plastic containing the ECM Additive. ECM identifies a subset of these 44 tests that it contends provides support for its claims. Complaint Counsel and their experts challenge whether the methodology and results of those tests provide adequate substantiation. Complaint Counsel also assert that a different subset of the 44 tests affirmatively shows that ECM’s biodegradability claims are false.

**Tests Relied Upon by ECM as Showing Biodegradation:** In accord with the ALJ’s analysis, we limit our review to anaerobic tests; aerobic tests are not competent and reliable evidence of biodegradation in landfills, which are anaerobic environments. *See* IDF 1045 (citing

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<sup>65</sup> *See* CCX 895 at 16 (Michel Rebuttal Expert Report) (“The presence of a biofilm on a surface does not necessarily lead to the biodegradation of the surface upon which it is attached.”) (citing N. Cerca, G.B. Pier, M. Vilanova, *Quantitative Analysis of Adhesion and Biofilm Formation on Hydrophilic and Hydrophobic Surfaces of Clinical Isolates of Staphylococcus Epidermidis*, 156 RES. MICROBIOL. 506, (2005); J.C. Araujo, R. Mortara, JR Campos, & RF Vazoller, *Development and Analysis of Anaerobic Biofilms onto Hydrophobic and Hydrophilic Surfaces*, 25 ENVTL. TECH. 809 (2004)); Michel, Tr. 2865 (explaining that biofilms form inside bathroom pipes but do not degrade the pipe).

Barlaz, Tr. 2300, RX-853 at 7 (Barlaz Expert Report)); ID 240-41 & 241 n.43. We also do not consider tests that rely on methods such as weight loss or informal backyard experiments that scientists in the field would not consider sufficient to determine biodegradation. *See* IDF 741; ID 240. After excluding these tests, ECM's support comprises eight tests conducted by Eden Research Laboratories ("Eden"), IDF 1080-1216, ten tests conducted by Northeast Laboratories (NE Labs), IDF 1267-1424, and a BMP test conducted at North Carolina State University. IDF 1437-47.

Our review of these tests and the testimony by Dr. Barlaz regarding the test results leads us to conclude that ECM has not provided adequate substantiation for its claims. None of the tests even purports to demonstrate complete biodegradation in landfills within five years. Moreover, the tests often fall short of the well-designed, well-conducted, well-controlled, and appropriately analyzed testing that would satisfy the relevant scientific community. ECM's evidence is fraught with gaps and methodological inadequacies that lead us to question any assertion that the ECM Additive enhances the biodegradation of plastic products. Indeed, taking account of the contrary evidence presented by Complaint Counsel as well, we find it as likely that the ECM Additive has no meaningful effect on the biodegradation of plastic products as that it does.

To begin with, test procedures often were problematic because many of the tests diverged from accepted methodologies. For instance, in conducting long-term extension testing, NE Labs employs a unique methodology that refreshes the inoculum after the generation of biogases for the positive control has plateaued. *See* Johnson, Tr. 1583 (ASTM protocol does not allow for extended testing up to 365 days). In these tests, NE Labs removes the test material from the testing environment and places it in new canisters with fresh inoculum. IDF 1252. During this transition, however, the test material is exposed to oxygen, even if the new canisters are sparged with nitrogen to remove excess atmospheric gases. Johnson, Tr. 1574. Thus, these long-duration extension tests are not strictly anaerobic. *See* Barlaz, Tr. 2334 (explaining that test results would be "questionable" if there was continuous variation between anaerobic and aerobic conditions). The test results and reports do not indicate when inoculum is refreshed and the test material is exposed to oxygen, Johnson, Tr. 1594, so results for the extension testing cannot be appropriately interpreted.

Moreover, although ECM asserts that Dr. Barlaz's analysis establishes that the plastic generated a statistically significant amount of methane, RAnsB 42, 45, ECM failed to present evidence sufficient to allow confident conclusions that methane was generated from the plastic at issue rather than from the ECM Additive. The chemical content of ECM's additive is protected as a trade secret, but it nonetheless is acknowledged to be biodegradable. IDF 159-60. Thus, tests of the efficacy of ECM's additive must consider whether evidence of biodegradation of the test sample (*i.e.*, methane produced in a gas evolution test) shows more than biodegradation of the additive. CCX-891 at 15-16 (McCarthy Expert Report). In other words, the tests must identify biodegradation from the plastic, not just from the ECM Additive.

For roughly half of the studies (three tests by Eden and six tests by NE Labs), however, the test reports do not reveal the percentage of ECM Additive in the test article.<sup>66</sup> Dr. Barlaz nonetheless concludes that the underlying plastic is biodegrading in these nine tests because the quantity of methane generated by the sample exceeds the quantity that he calculates could have been attributable to biodegradation of the additive. Yet, because the percentage of ECM Additive in the sample is unknown, the calculated quantity of methane attributable to the additive is only a guess, and any conclusions that some portion of the methane is attributable to the underlying plastic are based only on assumptions.

Beyond this, because the necessary underlying data often were not reported, Dr. Barlaz was unable in most instances to calculate t-statistics that might show that the methane generated was statistically significant.<sup>67</sup> In those instances, Dr. Barlaz instead relied on the ratio of methane generated by the test article to the methane generated by the inoculum to confirm that the test article was biodegrading. Barlaz, Tr. 2248-49, 2261. But this ratio only tends to demonstrate that the test article – the plastic/additive mix – is biodegrading; it does not distinguish between biodegradation of the ECM Additive and biodegradation of the underlying plastic.<sup>68</sup>

In six instances Dr. Barlaz calculated t-statistics to show that the measures of methane were statistically significant.<sup>69</sup> Here again the record lacks analysis of the significance of the methane generated by the plastic alone. Dr. Barlaz's t-statistics establish only that biodegradation of the test article – the combination of plastic *plus* the additive – was statistically significant, *i.e.*, that the additional methane generated by the plastic/additive mix over the methane generated by the inoculum was statistically significant. He subtracts the methane potentially derivable from the ECM Additive, but only *after* performing his t-test analysis. *See* IDF 1012; Barlaz, Tr. 2255 (calculations based on methane produced from the additive do not affect his statistical analysis, but rather, affect what comes after that analysis); *see also id.* at 2247-49, 2252-60. So even for the minority of tests that ECM claims present a statistically

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<sup>66</sup> *See* IDF 1159 (RX-859, Eden FP International), 1188 (RX-861, Eden MicroTek), 1205 (RX-862, Eden EcoLab), 1344 (RX-396, NE Labs 1048819 (EcoSmart Plastics II)), 1360 (RX-395, NE Labs 1150851 (Sweet Tape Enterprise)), 1376 (RX-394, NE Labs 1150851 (TycoPlas Sdn. Bhd.)), 1399 (RX-393, NE Labs 1253020 (National Tree Co.)), 1414 (RX-392, NE Labs 1048036 (Transilwrap Co.)), 1421 (RX-399, NE Labs N0843980 (Bio-Tec Environmental, LLC)).

<sup>67</sup> Dr. Barlaz reported t-statistics for only six of ECM's laboratory tests. RX-472 at column N.

<sup>68</sup> ECM also has cited the 1999 McLaren/Hart Report, CCX-266E, to its customers. IDF 277. That report relied on one anaerobic gas evolution test, conducted by Organic Waste Systems Inc. *Id.* at 6-7; *see* RX-265. The substance tested was the ECM pellets themselves, not a separate plastic product treated with the ECM Additive. IDF 1451. The test found the pellets had experienced 24 percent biodegradation after fifteen days, at which point the test was terminated. IDF 1456-57; CCX-266E at 6; RX-265 at 17. Because the pellets consisted of at least [REDACTED] percent ECM Additive, which was biodegradable, CCX-818 (Sinclair Dep.) at 163-64, the test provides no basis for concluding that anything other than the ECM Additive had biodegraded.

<sup>69</sup> Dr. Barlaz's calculations were needed because the test reports generally do not report the statistical significance of the level of methane generated, although this is generally required by the ASTM D5511 protocol. *See* Poth, Tr.1512-14 (Eden reports do not include reports of statistical significance except on special request); *see also* RX-248, RX-839, RX-403, RX-402, RX-859, RX-860, RX-861, RX-862; Johnson, Tr. 1535-36 (NE Labs conducts statistical analysis only on special request), 1538, 1587-88 (NE Labs does not report confidence limits or standard errors and has no way of knowing whether the results are statistically significant).



significant showing, ECM presents no calculations to establish the statistical significance of methane generated from the plastic itself.

Most importantly, not one of ECM's tests shows complete biodegradation of plastics in landfills within five years. The other deficiencies are significant, but even if they were not present, the tests relied upon by ECM entirely fail to substantiate the claims at issue.

**Tests that Show No Biodegradation:** We view ECM's test results in light of the complete record, which includes gas evolution testing that yields contrary results. Competent and reliable scientific evidence in support of efficacy claims "should be sufficient in quality and quantity based on standards generally accepted in the relevant scientific fields, when considered in light of the entire body of relevant and reliable scientific evidence, to substantiate that each of the marketing claims is true." FTC Green Guides, 16 C.F.R. § 260.2. Similarly, for nonspecific establishment claims, the advertiser "must possess evidence sufficient to satisfy the relevant scientific community of the claim's truth." *POM Wonderful*, 777 F.3d at 491 (quoting *Bristol-Myers*, 102 F.T.C. at 321). Certainly, experts in the field would interpret particular test results in the context of other relevant evidence.

Again, limiting our review to tests that investigated anaerobic biodegradation, the record includes three BMP tests conducted at North Carolina State University (CCX-946, CCX-951, CCX-954), three tests by Stevens Ecology (CCX-174, CCX-175, CCX-176), a test by Advance Material Center (CCX-173), tests by Organic Waste Systems, Inc. (OWS) (CCX-156, CCX-157, CCX-163, CCX-169, CCX-171), and a test conducted at Ohio State University by Eddie Gomez and Dr. Michel (CCX-164). As the ALJ explained, test reports for several of these tests were admitted into the record without explanation or discussion by a fact or expert witness. ID 256-62. Consequently, the ALJ gave them little weight. *Id.* We examine the tests more closely.

Many of the test reports showing no biodegradation fall short of the standard that experts in the field expect. As the ALJ explained, in two of the tests conducted by Stevens Ecology and one test by OWS, the positive control did not biodegrade sufficiently to establish that the test environment was suitable. *See* ID 256-57, 259. There is evidence that the third Stevens Ecology test did not permit continuous contact between the test article and the inoculum. *Id.* at 256-57. Several of the OWS reports do not disclose the underlying data, such as the amount of methane generated or the percentage of ECM Additive. *Id.* at 258-61; *see* CCX-156, CCX-157, CCX-169, CCX-171. In addition, two of the OWS tests did not include appropriate controls. ID at 260-61; *see* CCX-163, CCX-171.

Other tests, however, meet the standards that experts in the field would accept to support conclusions regarding biodegradability. One of the NCSU BMP tests showed no methane production, and two tests produced only negligible amounts of methane. IDF 1434 (citing CCX-951), 1435 (citing CCX-946, CCX-954). Although these BMP tests were conducted in a liquid environment, Dr. Barlaz, who supervised the tests, explained that a BMP test is a screening test that would determine if any biodegradability is possible and that the actual volume of methane generated in a landfill may be less than the amount shown in the BMP test. CCX-952 at 1.

The test conducted by Gomez and Michel at Ohio State University is the only published, peer-reviewed study to address whether ECM Plastic is biodegradable. ID 254; *see* CCX-164

(E.F. Gomez & F.C. Michel, Jr., *Biodegradation of Conventional and Bio-Based Plastics and Natural Fiber Composites During Composting, Anaerobic Digestion and Long-Term Soil Incubation*, 98 J. POLYMER DEGRADATION & STABILITY 2583 (2013)). The study ran an ASTM D5511 test on two plastics treated with the ECM Additive and also ran a soil test on the materials. The study found, based on statistical analysis, “There was no significant difference in the carbon conversion of the negative control (PP) and the plastic containing the additive.” CCX-164 at 8. The study found that “[c]onventional plastics and those containing additives did not degrade at all under any of the three conditions.” *Id.* The study concludes, “[P]lastics containing additives that supposedly confer biodegradability to polymers such as polyethylene and polypropylene did not improve the biodegradability of these recalcitrant polymers.” *Id.*

ECM argues that the study by Gomez and Michel should not be credited for several reasons. First, the study was funded by Myers Industries, which ECM contends is a competitor because it sells compostable gardening pots. Myers provided the ECM Plastic that was used in the test, and ECM suggests that Myers might have improperly incorporated the ECM Additive when it prepared the plastic sample. ECM also critiques the value of the publication because peer reviewers did not see the raw test data and, contrary to the conflict of interest standards of the publisher, the authors did not disclose the study’s funding. RAnsB 9, 36. ECM’s arguments, however, do not undermine the significance of the study. The record indicates that Myers Industries wished to sell biodegradable gardening pots in addition to compostable pots. *See* Michel, Tr. 2934; CCX-417 (log summarizing ECM/Myers communications regarding possible sales of the ECM Additive to Myers). Unless we assume that Myers’ stated objectives in sponsoring the test were a ruse – and that a gardening pot seller sponsored and biased a scientific study for the purpose of undermining the credibility of an upstream producer of plastic additives – Myers had reason to prepare the sample properly. Moreover, the record shows that ECM advised Myers on proper preparation of ECM Plastics. *See* CCX-417 at 2-4. Although the raw data were not provided to reviewers when the article was submitted for publication, the data appear in the article in a graphical format. Michel, Tr. 2940-41. ECM has not shown that the failure to disclose funding of the study, while contrary to the publication’s requirements, was likely to have created a conflict of interest that would have influenced peer reviewers.

More generally, ECM argues that the tests that show no evidence of biodegradability of ECM Plastics are merely inconclusive, not affirmative evidence that the ECM Additive does not work. *See* RAnsB 8-9. ECM’s experts identified reasons why a gas evolution test performed on ECM Plastics might not show positive results, including a problem with the pH in the test environment; an inoculum that is not viable for extended testing in a closed system; another additive in the plastic that is antimicrobial; or improper preparation of the amended plastic (*i.e.*, scorching when the plastic was melted) that rendered the ECM Additive inefficacious. *See* Sahu, Tr. 1939-40; Barlaz, Tr. 2232, 2273. Although we acknowledge the possibilities, we also recognize the limits of ECM’s argument. When ECM’s expert indicated that pH problems or unsuitable inoculum could explain test results that showed no biodegradability, the expert also testified that he was only suggesting theoretical possibilities; he did not see any reason to believe these issues affected any tests in the record. Barlaz, Tr. 2335-37 (adding that biodegradation of the tests’ positive controls indicated that the inoculum was viable). As to the hypothetical presence of antimicrobial additives, we observe that ECM’s claims that its additive renders plastic biodegradable do not disclaim efficacy if other additives are also included. Finally, we find the possibility that the test material was improperly prepared in ways that undermined the

ECM Additive's performance too speculative. The tests were conducted for potential ECM customers with a business interest in accurate results, and these potential customers had been advised by ECM about the proper process to ensure that the additive was properly distributed throughout the plastic and that it was not scorched. IDF 216-18, 230.

We find that ECM's efficacy claims – that ECM Plastics will fully biodegrade in a landfill within 5 years – are unsubstantiated, and therefore, misleading. Our conclusion is based on ECM's failure to appeal the ALJ's finding that ECM lacked substantiation for its 9 month to 5 year claim, agreement among the scientific experts in this proceeding that they have not seen evidence that ECM Plastics fully biodegrade in a landfill in less than 5 years, and our review of the gas evolution and other tests in the record. We also find that ECM's establishment claims – that scientific testing, including ASTM D5511 tests, demonstrate that ECM Plastics will fully biodegrade in less than 5 years – are false. As ECM readily acknowledges, the ASTM D5511 test methodology does not support the claims alleged in the Complaint.

### **C. ECM's Rate Claims Are Material.**

Thus far we have found that ECM made the express claim that ECM Plastics will completely biodegrade in a landfill within nine months to five years; ECM made the implied rate claim that ECM Plastics will fully biodegrade in landfills in a reasonably short period of time; ECM made the claim that scientific tests prove its rate claims; and ECM's claims are false and unsubstantiated. The remaining liability issue is whether the express and implied claims are material – whether they would likely be important to a reasonable purchaser and affect his/her purchasing decision or other conduct.<sup>70</sup> *Deception Statement*, 103 F.T.C. at 175-76; *see, e.g., Kraft*, 970 F.2d at 322 (“a claim is considered material if it ‘involves information that is important to consumers and, hence, likely to affect their choice of, or conduct regarding a product’”) (quoting *Cliffdale Assocs.*, 103 F.T.C. at 165).

In most cases, the very existence of an express claim is sufficient to demonstrate that the claim is material. Accordingly, we typically apply a presumption of materiality to express claims. We also typically apply the presumption to implied claims when there is evidence that the seller intended to make the claim, as well as to claims that significantly involve health, safety, or other areas with which reasonable consumers would be concerned. *Cliffdale*, 103 F.T.C. at 182; *Deception Statement*, 103 F.T.C. at 182. The presumption also applies when the claim pertains to the central characteristics of the product, such as those relating to its purpose, efficacy, or cost. *See, e.g., Telebrands*, 140 F.T.C. at 292; *Thompson Med. Co.*, 104 F.T.C. at

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<sup>70</sup> In most false advertising cases the “consumer” is synonymous with the “purchaser” of the product at issue. Here, however, the consumer typically does not “purchase” the final plastic product (such as a grocery bag or plastic packaging material) made with the ECM Additive. Rather, the purchasing decision is made by plastics manufacturers, who are motivated to produce and sell environmentally-friendly products based on perceived demand for such products by their own customers, who in turn are motivated to provide such products because of end-use consumer preference for environmentally-friendly products. *See* IDF 205. Thus, the appropriate focus of the materiality inquiry in this case is on the importance of the rate claim to ECM's customers and to others in the supply chain who purchase the ECM Additive and the plastics made with it, which reflects the importance to the end-use consumer. *See, e.g., FTC v. Wash. Data Res.*, 856 F. Supp. 2d 1247, 1272 (M.D. Fla. 2012) (“A representation is material if likely relied upon by a reasonable prospective purchaser.”).

816-17. However, a respondent may rebut this presumption by providing evidence that the claim is not material – *i.e.*, “evidence that tends to disprove the predicate fact from which the presumption springs (*e.g.*, that the claim did *not* involve a health issue) or evidence directly contradicting the initial presumption of materiality. *Novartis*, 127 F.T.C. at 686 (adding, “[t]his is not a high hurdle”); *see also Jerk, LLC*, 2015 WL 1518891, at \*12 (F.T.C. Mar. 13, 2015). If the respondent does so, we proceed to weigh all of the evidence provided by the parties, including, where appropriate, the predicate facts that gave rise to the presumption. *Novartis*, 127 F.T.C. at 686-87.<sup>71</sup>

In his Initial Decision, the ALJ concluded that “a weigh[ing] of all of the evidence presented by the parties on the issue shows that Respondent’s claims that ECM Plastics will fully biodegrade in a landfill within nine months to five years, and that tests prove such claim, are material to the purchasing decisions of ECM customers, and to downstream customers.” ID 288 (internal quotation omitted). He cited abundant evidence in support of his conclusion that the express claim was material to direct and indirect customers, and concluded that evidence of the materiality of that claim to end-use consumers was not required. ID 288-91 & n.55. With relevance to the implied claim, he noted “there is no dispute between the parties that ECM Customers buy the ECM Additive because they want to provide ‘biodegradable’ plastics to meet their customers’ demand for such products, or that biodegradable products are ‘important,’ at least in a general sense, to consumers.” ID 285; *see also* IDF 1503-07. We agree and affirm the ALJ’s rulings.

All of ECM’s claims are presumptively material. The claim that ECM Plastics will biodegrade in nine months to five years was express. Both the express and implied claims were an important, intended feature of ECM’s marketing. Indeed, the sole purpose of the ECM Additive is to hasten the biodegradation of plastic and the claims announce the product’s effectiveness in achieving that purpose. The express claim, the implied claims, and the contention that tests prove these claims all relate to this central characteristic of the ECM Additive.

Even apart from any presumption, however, the evidence clearly demonstrates materiality. We noted at the outset of our opinion the importance of the time element to potential customers that is reflected in contemporaneous ECM business documents, where ECM acknowledged the importance of its being able to certify that ECM Plastics biodegrade within “a reasonable period of time.” CCX-826. Indeed, ECM asked its customers to sign a Certificate of Assurance that they would always use ECM Additive in an amount representing at least one percent of weight for the very reason that “ECM’s reputation can be materially and, perhaps, irreparably damaged when products claiming to use ECM MasterBatch Pellets fail to biodegrade with[in] a reasonable period of time.” *Id.* In short, ECM for many years touted the short period of time it would take for ECM Plastic to biodegrade, handed out certificates to its customers

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<sup>71</sup> ECM contends that all of the evidence the ALJ cited was insufficient to show materiality because Complaint Counsel failed to present direct testimony or other evidence that any plastic company or end-use consumer altered a purchasing decision based on the nine months to five years claim and that such evidence is required for finding the rate claim material. RAppB 21, 24-25, 39. While direct evidence of actual reliance or injury may be probative on the issue of materiality, it is not required. *See Novartis*, 127 F.T.C. at 685; *Kraft*, 114 F.T.C. at 134. Rather, the materiality inquiry focuses on whether the claim is *likely* to affect the consumer’s choice of, or conduct regarding, a product and therefore *likely* to cause injury if it is false. *See Cliffdale*, 103 F.T.C. at 165-66.

certifying that scientific testing proved both the “rate and extent” of biodegradation, and stressed to its customers the importance to its reputation that biodegradation occur within a reasonable amount of time.

Further, ECM’s litigation contention – that rate claims were not material because customers cared only about “intrinsic” biodegradability – is belied by its contemporaneous business conduct, and we find the argument unpersuasive.<sup>72</sup> ECM made the rate claims in a wide variety of its marketing materials and then often repeated the express claims in one-on-one communications with potential customers. IDF 245-47, 253, 256, 1498, 1501.<sup>73</sup> As the ALJ explained, “[i]t is logical to conclude . . . that [ECM] would not promote the ECM Additive with these claims unless it was likely to have an effect on the purchasing decisions of its Customers.” ID 288 (referencing the “9 months to 5 years” claim); *see* IDF 1500 (same). We agree.

Many of ECM’s customers and potential customers asked ECM specific questions about the rate claims, which, as the ALJ explained, “is further proof that this claimed characteristic of ECM Plastics was an important factor to ECM Customers in determining whether to purchase the ECM Additive.” ID 288-89 (referencing the “9 months to 5 years” claim); *see* IDF 1502 (same).<sup>74</sup> Indeed, Mr. Sinclair, ECM’s President, acknowledged that potential customers frequently asked about the rate claim. CCX-423 at 9 (stating, in advising purchaser regarding the nine month to five year time frame, [REDACTED]). ECM’s

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<sup>72</sup> ECM also argues that features of the ECM Additive other than the rate of biodegradation (*e.g.*, cost, adaptability to manufacturing process) were important to customers. However, rate need not be the only factor or even the most important factor in the customer’s purchasing decision; all that is required is that it be *an* important factor, which it clearly is. *Novartis*, 127 F.T.C. at 695.

<sup>73</sup> Similarly, ECM disseminated its claim that tests prove its rate claims. The Certificate of Biodegradability that ECM issued to its customers states that “numerous plastic samples, submitted by ECM BioFilms, Inc., have been tested by independent laboratories in accordance with standard test measures approved by ASTM, ISO and other such standardization bodies to determine the rate and extent of biodegradation of plastic materials.” IDF 266, 269.

<sup>74</sup> ECM argues that the ALJ referenced only four such inquiries in his opinion, and that “only four such party queries out of a universe of 300 proves . . . that the matter was not material . . .” RAppB 23. However, as Complaint Counsel point out, the four inquiries referenced by the ALJ were only examples, and the record contains evidence of many additional inquiries from customers and potential customers about the rate claims. CCAnsB 8 & n.7; *see, e.g.*, CCX-283 at 2 (asking if ECM can provide a “statement of certainty” that ECM Plastic will “break down in approximately 9 months to 5 years”); CCX-275 at 3 (“Do you have any literature explaining the time (5 years or less) process?? [sic] I know you told me 9 months – 5 years . . . we are trying to use the proper language in our company literature.”); CCX-307 at 2 (asking ECM to review “a statement explaining the attributes of interest to consumers,” *i.e.*, that ECM Plastic would “fully biodegrade in 9 months to 5 years”); CCX-378 at 1 (expressing concern about evidence “to support a claim that the material will biodegrade in 9 months to 5 years”); CCX-423 at 9 (asking whether [REDACTED]); CCX-452 at 1 (“Where do you derive the 9 months to 5 years time frame for biodegradation?”); CCX-277 at 5 (asking ECM to advise on what “claims can be made” such as “plastic breaking down in 5 years or whatever?”); CCX-397 at 1 (asking ECM to confirm the accuracy of the statement: “Full Circle bags will decompose anywhere that natural organic material will in nine mo[n]ths to five years”); RX-135 at ECM-097628 (“Please provide your synopsis supporting the 9 month to 5 years claim for degradation ASAP”); RX-135 at ECM-011174 (“How quickly will film using the ECM additive fully biodegrade? Your flyer states 9 months to 5 years. That seems pretty broad. Have you been able to narrow that down?”); RX-135 at ECM-027525 (“[O]ur customer is requesting . . . information regarding the actual timeline or lifeline of the biodegradable material.”); RX-135 at ECM-057836 (“[W]hat time and condition . . . [for] the degradation?”).

CFO, Mr. Sullivan, likewise testified that potential customers “often ask[ed] how quickly” ECM Plastics would biodegrade. Sullivan, Tr. 721, 738-39.<sup>75</sup>

The record also shows that ECM not only provided its customers with the ECM marketing materials, including those containing the rate claims, but also encouraged those customers to use the materials for marketing ECM Plastics to their own customers. IDF 280. ECM also offered to provide, and often did provide, guidance to both direct and indirect customers on their advertising, including the rate claims. IDF 281; *see, e.g.*, CCX-397 at 1 (approving customer’s claim that bags will decompose in nine months to five years). In some cases, ECM customers forwarded the ECM marketing materials to their own customers, and directed them to contact ECM directly to answer any questions they might have. IDF 287-88. In other cases, the ECM customer would direct its own customers to the ECM website, which also contained the rate claims. IDF 291, 293.

Likewise, there is evidence showing that ECM customers actually used the rate claim in advertising to their own customers, often in the same language as that used by ECM. IDF 286, 1512.<sup>76</sup> For example, Island Plastic Bags (“Island”), one of ECM’s customers, stated in its advertisement for its “Bio Ultra Blend” trash liners, that it was using “ECM BioFilms’ technology” which will cause the liners to “completely degrade . . . in 9 months to 5 years depending on conditions.” IDF 292. Island and one of its distributors met with Down to Earth, a grocery store chain in Hawaii, and told Down to Earth that ECM Plastics would biodegrade within nine months to five years. IDF 293.

Beginning on April 22, 2009, Down to Earth featured ECM’s logo, along with a claim of complete biodegradation within nine months to five years in a landfill, on its grocery bags, which were placed at the checkout counter for use by its customers in packing their groceries. IDF 297. Before doing so, Down to Earth advised ECM of the text that it intended to have printed on the

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<sup>75</sup> ECM argues that its customers were sophisticated firms that decided to purchase the ECM Additive only after extended discussions, in which they discussed with ECM “the fact of environmental variability,” and, in some cases, also did their own testing. RAppB 15, 28-29. The record, however, shows that many of ECM’s customers have no expertise in biodegradation and relied on ECM precisely because they lacked both the facilities and expertise required to evaluate biodegradability. *See* ID 290. Even firms with substantial *plastics* expertise often lack expertise or facilities pertinent to *biodegradability* issues. IDF 1513-15, 1518, 1520-22, 1524-29. Further, even if ECM sometimes “softened” the rate claims in lengthy negotiations with customers, as it now asserts, the fact remains that ECM expressly, repeatedly, and prominently made the rate claims to potential customers over a long period of time. It is well-established that an advertiser cannot “cure the deception” in one advertisement with different statements in another. *See, e.g., In re Chrysler Corp.*, 87 F.T.C. 719, 751-52 (1976); *Removatron Int’l Corp.*, 884 F.2d at 1496-97.

<sup>76</sup> ECM argues that because the Initial Decision lists only 7 of its 300 customers as placing the 9 years to 5 months claim on their own advertising or products, the claim was not material to its other customers. RAppB 22, 33. However, there are many examples of customers passing along ECM rate claims to their own customers and end-use consumers in addition to the seven cited by the ALJ. *See, e.g.*, CCX-33 at 1 (repeating “nine months to five years” in marketing literature for air pillows); CCX-34 at 1 (same in memorandum to distributors for plastic film); CCX-37 at 1, 2 (same on website advertising rigid cards such as credit cards); CCX-38 at 1, 2 (same on brochure for packaging); CCX-40 at 2 (claiming biodegradation “up to 5 years” for packaging); CCX-44 at 1 (same on grocery bag); CCX-102 at 1 (stating on marketing card that product is biodegradable in 1-5 years); CCX-961 at 1 (repeating “Fully biodegrade in 9 months to 5 years” claim on website’s “Going Green” advertisement for plastic shopping bags).

bags, stating “I’d like to include the ECM logo (which I have) and a statement explaining the attributes of interest to consumers,” including the information that the bag will “fully biodegrade in 9 months to 5 years, depending on the amount of oxygen they are exposed to,” and asked for ECM’s comments. IDF 299. Down to Earth also used language from the ECM marketing materials to prepare a press release for the “roll out” of its biodegradable plastic grocery bags on Earth Day, 2009, and provided a draft of the press release to both ECM and Island for prior review. IDF 303. Down to Earth prepared the press release because it wanted people to know it was doing its part to contribute to a more “environmentally sound operation.” IDF 303.

Down to Earth purchased about 700,000 bags reflecting the nine months to five years claim, each year, for approximately five years, for a total of 3.5 million bags. IDF 301. Down to Earth has approximately 50,000-100,000 customers who, it is reasonable to infer, were exposed to the Down to Earth plastic bags containing the nine months to five years claim. IDF 301-02. Overall, Island manufactured ECM Plastic bags reflecting the rate claim for 50 to 100 different customers – in total approximately 10 million such bags. ID 300. Island explained that the rate claim was important because it helped to convey the message that “this is an actual technology . . . it’s for real.” CCX-811 at 54-55 (Island Dep.).

Interestingly, ECM argues that the nine months to five years rate claim could not have been material because ECM did not suffer any loss of business after finally discontinuing that claim in 2013. RAppB 5, 25, 29. However, we have found that the “some period greater than a year” representation with which ECM replaced the nine months to five years language was also likely to deceive consumers into believing that ECM Plastics would biodegrade in a reasonably short period of time (*i.e.*, within five years). *See supra* Section III.A.3. Indeed, survey evidence suggests that consumers viewed the two representations similarly. *See supra* Section III.A.3.b. Thus the fact that ECM did not lose business likely can be attributed to its substitution of one claim for another with similar deceptive content.

All of this evidence strongly supports the inference that ECM’s rate claims were important to the purchasing decisions of those in its commercial supply chain because they knew their customers cared about products that could help the environment. *See, e.g.*, IDF 280, 299, 1503. By contrast, ECM’s rebuttal arguments, all of which the ALJ rejected, are unsupported by the record, contrary to applicable law, and unpersuasive. ID 288-91. In sum, Complaint Counsel have shown that ECM’s rate claims were material to ECM’s customers and to those customers’ own downstream customers.

#### **D. Means and Instrumentalities Liability**

The Initial Decision determined that ECM was also liable under the “means and instrumentalities” doctrine<sup>77</sup> for providing the means for its customers and others in the supply chain to themselves engage in deception. ID 292-94, 319. That doctrine provides that “[t]hose who put into the hands of others the means by which they may mislead the public, are themselves guilty of a violation of Section 5 of the Federal Trade Commission Act.” *Waltham*

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<sup>77</sup> While ECM is liable for its direct dissemination of deceptive marketing materials to its customers, it may also be held vicariously liable for the conduct of others in passing along the deceptive claim. ID 292 & n.56.

*Watch Co. v. FTC*, 318 F.2d 28, 32 (7th Cir. 1963). The doctrine ensures that “[t]he author of false, misleading and deceptive advertising may not furnish customers with the means of misleading the public and thereby insulate himself against responsibility for its deception.” *Irwin v. FTC*, 143 F.2d 316, 325 (8th Cir. 1944). ECM has not separately appealed the ALJ’s means and instrumentalities ruling.

As the ALJ found, ECM provided its customers with marketing materials containing the claims that ECM Plastics will fully biodegrade in landfills in nine months to five years and that tests prove this and encouraged its customers to use those materials in advertising to their own customers. *See* IDF 280, 284, 290, 305, 312. ECM’s customers did so, thereby passing the deceptive claim along the supply chain. *See* IDF 285-86, 289-90, 292-93, 305, 307-10, 312. This record amply establishes ECM’s liability under the means and instrumentalities doctrine.

## **E. Defenses**

### **1. First Amendment**

ECM contends that the Order, which prohibits unqualified claims that ECM Plastics are degradable unless ECM possesses competent and reliable scientific evidence that shows complete decomposition in a landfill within five years, would violate the First Amendment by imposing a prospective ban on truthful commercial speech. RAnsB 49, 51-52. ECM contends that because “nothing reliably biodegrades within one year in a landfill” and because no expert could explain how to reliably substantiate a claim concerning the “time to complete decomposition” or the “rate and extent of decomposition,” the Order effectively creates “a categorical bar on biodegradable claims.” *Id.* at 51; *see also* RRB 20-21. It “would impose a prior restraint on truthful speech without reliance on obvious, less speech restrictive alternatives (such as a qualification that there is no known precise rate of biodegradation).” RAnsB 51 (citing *Pearson v. Shalala*, 164 F.3d 650 (D.C. Cir. 1999)). And it would lack a reasonable relationship to the harm found, in violation of the Supreme Court’s ruling in *Central Hudson Gas & Elec. Corp. v. Pub. Serv. Comm’n*, 447 U.S. 557 (1980). Tr. Oral Arg. at 80. According to ECM, rather than prohibiting unsubstantiated claims, any remedy must allow a disclaimer that there is no scientific test for biodegradation rates. *Id.* at 80-81, 85-86.

We disagree. Commercial speech must at least “concern lawful activity and not be misleading” to qualify for constitutional protection. *Central Hudson*, 447 U.S. at 566; *see also*, *e.g.*, *In re R.M.J.*, 455 U.S. 191, 200 (1982) (“False, deceptive or misleading advertising remains subject to restraint.”). The governmental “interest in ensuring the accuracy of commercial information in the marketplace is substantial.” *Edenfield v. Fane*, 507 U.S. 761, 769 (1993). In this case, following an adjudication that examined the details and facts regarding ECM’s representations, we found ECM’s efficacy and establishment claims misleading because they were unsubstantiated by the science demanded by experts in the field. An Order that requires comparable substantiation

as a forward-looking remedy is perfectly commensurate with the Commission’s assessment of liability for [ECM’s] past conduct: if past claims were deceptive in the absence of [particular] substantiation, requiring [that level of substantiation] for future



claims is tightly tethered to the goal of preventing deception. . . . For purposes of *Central Hudson* scrutiny, then, the injunctive order's requirement of *some* [accepted] substantiation . . . directly advances, and is not more extensive than necessary to serve, the interest in preventing misleading commercial speech.

*POM Wonderful*, 777 F.3d at 501-02. Similarly, a forward-looking order that requires qualifications of the type needed to prevent ECM's prior unqualified biodegradability claims from being misleading is directly related to preventing misleading commercial speech and not more extensive than necessary.

We reject ECM's contention that the Order effectively prohibits all biodegradable claims because we reject ECM's contention that there is no scientific means to provide a rate or extent qualification. In fact, the ASTM D5511 methodology, which ECM explicitly references in some of its claims and which ECM provides as substantiation in this case, expressly describes an appropriate means to qualify biodegradable claims. ASTM D5511 states: "Claims of performance shall be limited to the numerical result obtained in the test . . . and not be used for unqualified 'biodegradable' claims. Reports shall clearly state the percentage of net gaseous carbon generation for both the test and reference samples at the completion of the test. Furthermore, results shall not be extrapolated past the actual duration of the test." CCX-84 at 1 (ASTM D5511 § 1.4). Consistent with this instruction from ASTM, and despite ECM's argument that such descriptions are impossible, products offered to consumers in the marketplace can include descriptions such as "3% biodegradable in 90 days," provided that the descriptions are truthful and are accompanied by warnings making it clear that test results do not support extrapolations.

We similarly reject ECM's contention that we must accept its proposed qualifier – that there is no known precise rate of biodegradation – rather than prohibit ECM from making unsubstantiated claims. ECM's proposal is inadequate to prevent consumers from receiving the misleading impression that ECM Plastics will completely biodegrade in landfills within a reasonably short period of time, as substantiated by scientific tests. It addresses neither the rate nor extent of biodegradation that consumers perceive in ECM's representations. It offers only a vague allusion to variations in conditions and/or the imprecision of available substantiation techniques, which is information consumers would not understand or find useful, rather than acknowledging ECM's lack of substantiation.<sup>78</sup> Having found that ECM's claims violated the FTC Act, we will not accept remedial language that does not address the deception.

## **2. ECM's Contentions that an Order is Not in the Public Interest and FTC Action is *Ultra Vires***

ECM repackages its argument regarding materiality to claim that a remedial order is not in the public interest because there is no showing of harm or injury. Relying on cases such as

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<sup>78</sup> Indeed, ECM's proposal even falls far short of the qualifiers suggested in *Pearson* as disclosures that might prevent claims from being misleading. See *Pearson*, 164 F.3d at 658-59 (explaining that the FDA's concern regarding the absence of substantiation for efficacy claims could be effectively remedied by prominent disclaimers stating that "the evidence in support of this claim is inconclusive").

*FTC v. Klesner*, 280 U.S. 19 (1929), ECM claims that mere deception, without a showing of actual injury, does not satisfy the public interest requirement for an order. See RRB at 18; RAppB 39-41. We reject ECM’s contention on both factual and legal grounds.

We have already explained that biodegradation rate claims shaped the purchasing decisions of ECM customers and downstream purchasers. See *supra* Section III.C. To the extent they bought a product they otherwise would not have purchased, they were harmed by ECM’s deception. Moreover, the record shows that purchasers paid a premium for ECM Plastics, making injury clear. See CCX-35 at 1 (describing a “small” premium charged for ECM Plastics); CCX-487 at 3 (describing a 40% premium price for biodegradable plastic relative to standard products); cf. RAppB 44 (implicitly conceding that customers pay higher prices for what they perceive to be biodegradable products by asserting the need for “market incentives for paying higher costs associated with producing those [biodegradable] plastics”). Thus, we reject the factual basis for ECM’s claim that injury is absent.

As a matter of legal analysis, ECM’s reliance on *Klesner* is inapposite. The Supreme Court has explicitly explained that *Klesner* does not hold that there is no public interest in preventing deception about a product’s characteristics. Rather, when “a large number of buyers, comprising consumers and dealers, believe” a characteristic of a product is advantageous and

such purchasers are deceived into purchasing an article which they do not wish or intend to buy, and which they might or might not buy if correctly informed as to [that characteristic, then] [w]e are of opinion that the purchasing public is entitled to be protected against that species of deception, and that its interest in such protection is specific and substantial. There is nothing in the *Klesner* Case to the contrary.

*FTC. v. Royal Milling Co.*, 288 U.S. 212, 216-17 (1933) (citations omitted). ECM’s rate claims affect purchasing decisions in the manner described in *Royal Milling*, and ECM’s reliance on *Klesner* is consequently misplaced.<sup>79</sup>

Additionally, ECM suggests that the proposed Order’s prohibition on unqualified biodegradability claims unless items completely decompose within five years after customary disposal dictates rapid biodegradation and constitutes *ultra vires* agency action by interfering with national environmental policy over which the Environmental Protection Agency has exclusive authority. RAppB 43-44. The proposed Order does not regulate, or create any mandate regarding, the physical properties of any products that are asserted to be biodegradable; we are not requiring that products rapidly biodegrade. All that we are insisting upon is a truthful qualification to the pertinent marketing or advertising. Nonetheless, ECM maintains that our remedy would remove market incentives for paying higher costs associated with producing

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<sup>79</sup> *Klesner* was decided in 1929, before the 1938 Wheeler-Lea Amendments to the FTC Act added a proscription of “unfair or deceptive acts or practices” to the Act’s original prohibition of “unfair methods of competition.” *Klesner* thus reflects the thinking of an era when the Court was hesitant to prohibit deceptive practices without a demonstration of adverse effects on competition, see *id.*, 280 U.S. at 28, and ECM errs by disregarding the statutory revision.

biodegradable plastics and will result in landfills receiving either non-biodegradable plastics or rapidly biodegrading products that undermine EPA’s initiatives to collect methane. *Id.* at 44. As to the first concern, we have already explained that truthful qualifications are possible, and ECM provides no reason to conclude that truthful qualifications will render biodegradable products uneconomic. The other hypothesis – that our remedy will somehow fill landfills with products whose rapid biodegradation would outpace the installation of methane collection facilities – also is contrary to the facts.<sup>80</sup> In sum, the proposed order prohibits deceptive advertising; it does not create environmental policy.<sup>81</sup>

### 3. Due Process

ECM contends that various pre-hearing discovery and evidentiary rulings by the ALJ violate ECM’s due process rights. RAppB 44-51. Throughout discovery, ECM raised various complaints with the ALJ. Judge Chappell considered the complaints and, when he deemed them meritorious, provided relief. *See, e.g.*, Order Granting in Part and Denying in Part Respondent’s Motion for Sanctions (Mar. 21, 2014). ECM then re-argued the same discovery disputes in its post-trial briefs, asserting that their resolution denied ECM due process. Considering the arguments anew, the ALJ concluded, “The notion that these same discovery disputes amount to a denial of due process is without merit.” ID 296. ECM now “renews and restates” those same objections on appeal. RAppB 44.

The courts and the Commission apply an “abuse of discretion” standard when reviewing errors allegedly made in evidentiary rulings at the trial or initial hearing level. *See, e.g., General Elec. Co. v. Joiner*, 522 U.S. 136, 141 (1997) and cases cited therein; *Olin Corp.*, 113 F.T.C. 400, 601 (1990) (exclusion of expert testimony); *Bristol-Myers Co.*, 102 F.T.C. 21, 363-64 n.89 (1983) (exclusion of expert studies); *Missouri Portland Cement Co.*, 77 F.T.C. 1643 (1970). While this means that the Commission will not routinely disturb an ALJ’s denial of discovery or exclusion of evidence, it may reverse such a procedural decision and reopen the record, as necessary or appropriate when the ALJ’s ruling is found to have been “unduly restrictive” or

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<sup>80</sup> ECM relies on testimony that the EPA requires installation of gas collection facilities within five years after waste burial and that installation is typical within two years. RAppB 44 (citing Barlaz, Tr. 2285). But ECM Plastics take longer than five years to biodegrade. *See* ID 246 (“both parties’ landfill experts agree that landfill conditions do not support the biodegradation times of less than five years”); *cf.* RAnsB 51 (“nothing reliably biodegrades completely within one year in a landfill, not even a tree trunk, a banana, or an orange”). The testimony of ECM’s – that “if a polyethylene . . . were to completely biodegrade in a landfill within one year after customary disposal” “that material would be a net contributor to global methane emissions at the typical landfill,” Barlaz, Tr. 2289, thus employs an unrealistic hypothetical.

<sup>81</sup> ECM’s companion argument – that if its nine months to five years rate claim were deceptive because ECM Plastics take more than that time to biodegrade, the salutary effect on the environment from increased capture of emissions would render the deception a claim without any injury – fallaciously suggests a trade-off between the deception and environmental benefit. But whether or not ECM made a deceptive rate claim, the rate of biodegradation of the ECM Plastics, and the corresponding pace of methane generation are unaffected; there is no environmental benefit. More importantly, even if there *were* an actual environmental benefit, that would not justify deceptively marketing the ECM Additive. *See FTC v. Algoma Lumber Co.*, 291 U.S. 67, 81 (1934) (rejecting an argument that “the public interest will be promoted by increasing the demand for *pinus ponderosa*, though it be sold with a misleading label, and thus abating the destruction of the pine forests of the east,” *i.e.*, that environmental benefits could justify deceptive marketing). Though “[t]he conservation of our forests” was “a good of large importance,” the Court explained, “the end will have to be attained by methods other than” deception. *Id.*

otherwise prejudicial or improper. *See, e.g., Foster-Milburn Co.*, 51 F.T.C. 369, 371 (1954) (hearing examiner improperly denied complaint counsel’s request to present scientific rebuttal witnesses); *cf. Modern Methods, Inc.*, 60 F.T.C. 309, 339 (1962) (hearing examiner erred in denying respondents’ request to present surrebuttal testimony); *see also* Commission Rule 3.54, 16 C.F.R. § 3.54 (reserving the Commission’s discretion to exercise all of the powers it could have exercised if it had made the initial decision).

ECM’s complaints fit within five groupings, four of which are efforts to exclude Dr. Michel’s study and rebuttal testimony. As discussed below, we find that ECM’s characterizations are not supported by the facts, and we concur with the ALJ’s conclusion that none of the discovery rulings denies ECM’s due process rights.

First, ECM argues that the ALJ applied the “rules in a way that permits surprise rebuttal witnesses (who have not previously been identified) [, which] violates Due Process.” RAppB 47. In particular, ECM contends that the ALJ improperly permitted Dr. Michel to appear as a rebuttal expert witness after Complaint Counsel and ECM agreed he would not be called as a fact witness and after Complaint Counsel had failed to include Dr. Michel on the initial April 2014 expert witness list. *Id.* at 45. ECM complains that Complaint Counsel first identified Dr. Michel as a rebuttal expert when “Complaint Counsel emailed ECM with Dr. Michel’s report on June 30, 2014 at 11:46 PM,” *id.* at 49, which ECM explains was only two days before the close of expert discovery.

Commission Rule 3.31A(a) provides: “Complaint Counsel shall serve respondents with a list of any rebuttal expert witnesses and a rebuttal report prepared by each such witness not later than 10 days after the deadline for service of respondent’s expert reports.” 16 C.F.R. § 3.31A(a). Implementing this rule, the last day for service of the report from any Complaint Counsel rebuttal expert witness was June 30, 2014, as specified in the ALJ’s Third Revised Scheduling Order. Complaint Counsel e-mailed Dr. Michel’s expert report to ECM on June 30, and were not obligated to disclose that Dr. Michel would be a rebuttal expert any earlier than that date.<sup>82</sup> Although Complaint Counsel failed to provide, along with the rebuttal report, a separate list identifying Dr. Michel as a rebuttal expert, the failure does not appear prejudicial to ECM, particularly given that the ALJ extended the period for ECM to depose Dr. Michel up to “at least three (3) business days in advance of the expected date of Dr. Michel’s testimony.” Order on Respondent’s Combined Motion at 4. Consequently, we find no denial of due process from failure to exclude Dr. Michel’s testimony as that of an improperly identified rebuttal expert witness.

Second, ECM argues that Dr. Michel’s testimony was designed to buttress initial expert testimony and to address issues that should have been part of Complaint Counsel’s affirmative case and therefore should have been barred as rebuttal. RAppB 46-48. The ALJ disagreed:

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<sup>82</sup> *See* ALJ’s Order on Respondent’s Combined Motion for Sanctions, to Exclude Expert Witness, and for Leave at 4 (July 23, 2014) (“Order on Respondent’s Combined Motion”). Nor does ECM explain how an agreement not to call Dr. Michel as a *fact* witness changes the deadline for identifying him as an *expert* witness.

An examination of the rebuttal report shows a point by point response to assertions in the reports of [ECM's] designated experts. That Dr. Michel, in drawing his conclusions, may rely on certain methodologies that are also used by Complaint Counsel's designated expert witnesses, as argued by Respondent, does not take Dr. Michel's opinions out of the realm of fair rebuttal.

Order on Respondent's Combined Motion at 3.<sup>83</sup>

Our review of Dr. Michel's expert report, CCX 895, and corresponding testimony confirms that Dr. Michel's opinions are proper expert rebuttal. The expert report quotes excerpts from ECM's expert reports and then provides rebuttal testimony directly applicable to those excerpts. Similarly, Dr. Michel's testimony responded only to the opinions introduced by ECM's experts.

Third, ECM asserts that the FTC interfered with a subpoena that was issued to Dr. Michel, which delayed evidence requested by ECM for weeks. RAppB 47. ECM criticizes the ALJ's refusal to impose ECM's requested sanctions, which included censure of Complaint Counsel, referral of Complaint Counsel to the DC Bar, and the exclusion of Dr. Michel's article from evidence.

Our review of the facts shows that ECM issued a subpoena *duces tecum* to Dr. Michel on February 28, 2014. The subpoena directed that the requested documents – including all documents responsive to Document Request 20, which sought all correspondence between Dr. Michel and the FTC – be provided to ECM by March 17, 2014. At the time Dr. Michel received the subpoena, he had not been retained by the FTC in the present case involving ECM, but he had been retained as a consultant since December 2012 on two other FTC environmental marketing investigations. *See* Order Denying Respondent's Motion for Sanctions for Unauthorized Dissuasion of Response to Subpoena *Duces Tecum* at 2 (Apr. 9, 2014).

On March 12, Dr. Michel contacted an FTC attorney working on the other matters to report that he received the subpoena in the present case and that some responsive documents in his possession had been submitted to the FTC by third parties in the other matters and had been provided to him as part of his consulting work. It was only when Dr. Michel contacted the other FTC attorney that Complaint Counsel in this case learned that anyone at the FTC had had contact with Dr. Michel. *Id.* On March 14, the FTC attorney investigating the other matters sent a letter to Dr. Michel, with copies to Complaint Counsel and ECM's counsel, explaining that certain third-party documents received by Dr. Michel were governed by a non-disclosure agreement that Dr. Michel had signed and Dr. Michel should not divulge those materials before March 28 to give the third-party submitters of confidential material an opportunity to seek an appropriate protective or *in camera* order consistent with FTC Rules of Practice. Also on March 14, the

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<sup>83</sup> When ECM subsequently raised the same argument two more times, the ALJ rejected it with similar rulings. *See* Order Denying Complaint Counsel's Motion for Leave to Call Rebuttal Fact Witnesses and Respondent's Request to Bar Rebuttal Expert Witness at 5-6 (Sept. 5, 2014) ("Dr. Michel's testimony was limited to matters within the scope of his report and to rebutting testimony offered by Respondent's experts.") (citing Tr. 2489-91); ID 297 ("Dr. Michel's rebuttal opinions constituted fair rebuttal.").

attorney investigating the other matters sent notices to counsel for the third parties to inform them of their rights to protect confidential information.

On March 17, Dr. Michel provided ECM's counsel with responsive documents, including material responsive to Document Request 20, but the accompanying transmittal letter explained that responsive third-party documents provided to the FTC for the other matters would be produced on March 28, to allow the third parties their opportunity to object to disclosure. On March 24 and again on March 28, the FTC attorney handling the other matters informed Dr. Michel that particular third parties did not object, and the attorney instructed Dr. Michel that he should produce the materials. "There is nothing in the record to indicate that [Dr.] Michel failed to provide the Third Party Submissions on or before March 28, 2014." *Id.* at 4.

Judge Chappell did not deny due process by rejecting ECM's motion for sanctions. As the ALJ explained, there is no evidence that Complaint Counsel or other FTC attorneys acted for the purpose of interfering with ECM's rights and no showing that ECM was deprived of relevant discovery. *Id.* at 8. Regarding the personal sanctions, Respondent either erroneously equates all FTC attorneys with Complaint Counsel for this case or asserts a conspiracy between Complaint Counsel and other FTC attorneys without any facts. As to the evidentiary sanction, ECM fails to connect the exclusion of Dr. Michel's study with the alleged improper conduct; Dr. Michel's study was not obtained from a third-party submitter, so its production to ECM was not delayed. We conclude that ECM's due process rights were not infringed by the denial of its motion for sanctions.

Fourth, ECM claims a denial of due process from the ALJ's refusal to exclude Dr. Michel's study and testimony as sanctions for Complaint Counsel's failure to timely disclose the study in discovery responses. RAppB 44-45. ECM alleges that Complaint Counsel and the FTC knew of Dr. Michel's study since 2012, but improperly withheld the information in discovery responses and first revealed the study on February 19, 2014, as a surprise tactic during the deposition of an ECM designee. *Id.* The ALJ, however, found that, while other attorneys at the FTC had engaged Dr. Michel as a consultant on other matters and received a draft of his article in 2012, *see* Order Denying Respondent's Motion to Sanction Complaint Counsel for Violation of Discovery Rules at 3 (Apr. 7, 2014), ECM "failed to demonstrate that, contrary to the sworn declarations submitted, Complaint Counsel [in this case] was aware of the Article prior to February 14, 2014." *Id.* at 5.

ECM alleges that, even after learning of Dr. Michel's study, Complaint Counsel failed to timely disclose it in supplemental discovery responses, so as to create a "gotcha" moment during a deposition. RAppB 50-51. Complaint Counsel contend that they obtained the study on Friday, February 14, 2014 after 8 p.m. Explaining that Monday was the President's Day holiday, Complaint Counsel acknowledge that they used the study on Wednesday, February 19 during the second day of a deposition of ECM's designated witness. *See* CCAnsB 18. Complaint Counsel also argue that the Scheduling Order required a supplemental response within three business days, which Complaint Counsel contend is consistent with their actions. *Id.* at n.14.

The ALJ determined that by delaying production for five days and "presenting the article to Respondent for the first time in the midst of the second day of the deposition, when Complaint Counsel had clearly determined the relevance and possible use of the Article before the start of

the deposition, Complaint Counsel did not supplement in a timely manner,” as required by Commission Rule 3.31(e). Order Granting in Part and Denying in Part Respondent’s Motion for Sanctions at 4 (Mar. 21, 2014). The ALJ imposed sanctions and prohibited Complaint Counsel from “using or in any way relying upon any of [the ECM designee’s] deposition testimony regarding the [a]rticle.” *Id.* at 6. The ALJ determined that excluding the article from the trial was not warranted because fact discovery was still ongoing, expert discovery continued for an additional two months, and the trial was scheduled to begin about a month later. *Id.*

Commission Rule 3.38(b) states the ALJ “may take such action in regard [to a failure to comply with a discovery obligation] as is just.” 16 C.F.R. § 3.38(b). As the Second Circuit has indicated, “a judge should inquire more fully into the actual difficulties which the violations [of discovery supplementation] causes, and must consider less drastic responses [than preclusion of the evidence].” *Outley v. City of New York*, 837 F.2d 587, 591 (2d Cir. 1988); *see also* 16 C.F.R. § 3.38(b) (instructing the ALJ to grant relief “sufficient to compensate for withheld testimony, documents or other evidence”). Here, ECM’s claim of a “gotcha” moment in a deposition was addressed directly by the ALJ’s relief. Without a showing of further prejudice caused by Complaint Counsel’s delay in complying with discovery obligations, the ALJ’s choice of sanctions did not deny due process to ECM.

Finally, ECM claims the ALJ erroneously denied its motion to call Dr. Paul Grossman as a surrebuttal expert to challenge the testimony of Dr. McCarthy, and that “[t]he relative importance of [Dr. Grossman’s] testimony renders the denial . . . a material violation of rights.” RAppB 49. ECM argues that “the ALJ denied ECM’s motion for leave to present Dr. Grossman’s testimony in pertinent part on a miscalculation of the motion due date,” because the ALJ erred when computing the due date for the motion by not excluding the July 4 holiday and incorrectly beginning the count before service of Complaint Counsel’s rebuttal expert’s report was complete. *Id.* at 50. ECM maintains that “denial of a motion as ‘untimely’ without any evidence of prejudice in the record is an abuse of discretion and clearly erroneous.” *Id.* at 49.

The ALJ, however, did not deny ECM’s motion for Dr. Grossman’s testimony solely, or even primarily, because of the purported late filing. Commission Rules provide that surrebuttal experts may be called only when “material outside the scope of fair rebuttal is presented” by a rebuttal report. 16 C.F.R. § 3.31A(a). In rejecting ECM’s motion to call Dr. Grossman, the ALJ’s primary finding was that ECM had failed to show that any material in Dr. Michel’s report was outside the scope of fair rebuttal. *See* Order on Respondent’s Combined Motion at 4; *see also* ID 298 (“Because Respondent failed to demonstrate that matters outside the scope of fair rebuttal had been presented, there was no valid basis for allowing a surrebuttal expert witness.”). Irrespective of any issue of timeliness, ECM’s failure to establish the essential predicate for calling a surrebuttal witness was a sound basis for denying its motion.<sup>84</sup> Thus, the ALJ did not deny ECM’s due process rights when he denied ECM’s motion.

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<sup>84</sup> Moreover, the subjects that Dr. Grossman would have addressed, *see* RAppB 48-49, do not rebut the opinion of Dr. Michel, Complaint Counsel’s rebuttal witness, but instead seek to undermine the credibility of Dr. McCarthy, who presented expert testimony in support of Complaint Counsel’s case in chief. To testify on these topics, Dr. Grossman should have been called as an identified expert witness, rather than a surrebuttal expert.

#### IV. The Order

The Commission's Order has five principal features. First, it prohibits any unqualified representation that a plastic product or package is degradable (or that any product, package, or service affects its degradability) unless (i) such representation is true, not misleading, and, at the time it is made, ECM possesses and relies upon competent and reliable scientific evidence that substantiates the representation; and (ii) the entire item will completely decompose into elements found in nature within five years after customary disposal.<sup>85</sup>

The limitation on unqualified representations that a plastic product is degradable is necessary to prevent deception of reasonable consumers who understand an unqualified representation of biodegradability to convey the message that a plastic product or package will biodegrade completely into elements found in nature within five years after customary disposal. It is tailored to the deceptive practices that the Commission has found.

Second, the Commission's Order allows qualified representations about degradation of plastic products if the representations are: (i) true, not misleading, and substantiated by competent and reliable scientific evidence possessed by ECM at the time they are made; and (ii) qualified by: the time to complete decomposition into elements found in nature, or the rate and extent of decomposition into elements found in nature; and, if the product will not decompose by a customary method of disposal, information about the type of non-customary disposal method and its availability where the product is sold. Such qualifications must disclose that the stated rate and extent of decomposition does not mean that the product or package will continue to decompose. The Order prohibits qualified representations such as that a product biodegrades in nine months to five years or in some period greater than a year, which we have found to be deceptive if unsubstantiated.

This provision permits ECM to promote the benefit of its products, in ways that are not misleading, to the extent, but not beyond, what can be scientifically substantiated. For example, ECM could represent that an ECM Plastic exhibits "2% biodegradation in 30 days, under ASTM D5511 laboratory conditions," provided that that representation is truthful and substantiated and that ECM states that "decomposition may not continue after 30 days." Similarly, subject to the same provisos, ECM could report findings that tests prove "x percent of biodegradation in y days" as opposed to "z percent of biodegradation" over the same period for untreated samples of the same plastic. Among other things, any protocol (or combination of protocols) substantiating such claims must 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. And, most importantly, the qualifier must not be misleading to consumers.

Third, as fencing-in relief, the Commission's Order prohibits representations that any product, package, or service offers any environmental benefit unless the representation is true,

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<sup>85</sup> Commissioner Ohlhausen dissents from the Order to the extent it requires that ECM assure complete decomposition within five years of any plastic product for which it makes unqualified biodegradable claims or qualified biodegradable claims that do not mention a time frame.



not misleading, and properly substantiated at the time it is made, including with competent and reliable scientific evidence where appropriate. The ALJ deleted this relief from his order, opining that Complaint Counsel have not shown that ECM misrepresented any “environmental benefit” and finding that term vague and overly broad. ID 308-09. The record, however, demonstrates that biodegradability mattered to consumers because of their desire for environmental benefits.<sup>86</sup> And the breadth of the term “environmental benefit” is what prevents ECM from repeating its deceptive conduct by wording around specific, prohibited language.

ECM’s violations were serious, repeated, and deliberate, and they warrant 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.” *FTC v. Mandel*, 359 U.S. 385, 393 (1959); *see also Niresk Indus., Inc. v. FTC*, 278 F.2d 337, 343 (7th Cir. 1960) (FTC orders may prohibit the use of “related and similar practices”). “The Commission is not limited to prohibiting the illegal practice in the precise form in which it is found to have existed in the past.” *FTC v. Ruberoid Co.*, 343 U.S. 470, 473 (1952). Rather, the Commission is permitted “to frame its order broadly enough to prevent respondents from engaging in similarly illegal practices in [the] future.” *FTC v. Colgate-Palmolive*, 380 U.S. 374, 395 (1965). “[I]t cannot be required to confine its road block to the narrow lane the transgressor has traveled,” but “must be allowed effectively to close all roads to the prohibited goal.” *Ruberoid*, 343 U.S. at 473. Here, the Order prevents ECM from pursuing different avenues to the same end-point by deceptively citing general or alternative environmental benefits rather than using the label “biodegradable.”

The seriousness of ECM’s deceptive conduct is evidenced by both the duration and pervasiveness of the biodegradation claims that permeated the company’s marketing efforts, and was enhanced by ECM customers’ inability to “readily judge for themselves the truth or falsity” of ECM’s claims. *Stouffer Foods Corp.*, 118 F.T.C. at 812. Further, ECM’s violations were deliberate. After using unqualified biodegradation claims at the outset, the company began using a “nine months to five years” claim after its customers indicated interest in knowing the time frame for degradation. Sinclair, Tr. 1613. But then the express “nine months to five years” claim came to be questioned by customers who were taking it “literally” and “trying to hold [ECM] to . . . certain time frames,” and the company realized it could not revert to the use of an unqualified claim under 2012 Green Guides. Sinclair, Tr. 770-71. So ECM decided to use the “some period greater than a year” language. *See* IDF 251-53; Sinclair, Tr. 770-71 (discussing ECM’s shift in marketing language). ECM’s awareness of concern with its rate representations and the Green Guides’ revision, and its calculated choice of a new representation that literally conformed to the new FTC guidance but conveyed essentially the same deceptive, implied claim, suggests a deliberateness of conduct that warrants fencing-in. *See Stouffer Foods Corp.*, 118 F.T.C. at 813-14 (awareness of the potential inappropriateness of a claim and that “characterization . . . was a delicate matter” suggests deliberateness of conduct that supports fencing-in). Moreover, the limitations on use of ASTM testing were express and available for everyone to see, so that ECM knew or should have known that it was misusing the ASTM results

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<sup>86</sup> Survey evidence shows that consumers saw biodegradation as an environmental benefit. *See, e.g.*, RX-846 at 15 (95% of Stewart survey respondents answered “yes” to Question 3, “Is the fact that a product is biodegradable helpful to the environment?”). *See generally supra* Section III.C (discussing the importance of biodegradation rates to purchasers).

in certifying that tests proved its claims. Under these circumstances, the modest fencing-in described above is appropriate.<sup>87</sup>

Fourth, the Commission's Order prohibits ECM from providing to others the means and instrumentalities with which to make any false, unsubstantiated, or otherwise misleading representation of material fact regarding any environmental benefit. This provision is needed to bar future conduct of the type through which ECM has transmitted the means to make deceptive biodegradation claims to others.

Finally, the Commission's Order prohibits ECM from misrepresenting the existence, contents, validity, results, conclusions, extrapolations, or interpretations of any test, study, or research. This provision specifically prohibits ECM from misrepresenting the results of testing protocols, such as those from ASTM, in ways prohibited by the testing organization. As discussed in Section III.B.2.d.i, ECM has departed from ASTM's express limitations in ways that have contributed to its deceptive practices: it has gone beyond the numerical results by making performance claims about biodegradation in most landfills; it has used ASTM testing for unqualified biodegradable claims; and it has extrapolated test results to make claims about complete biodegradation. Barring ECM from repeating its misuse of ASTM D5511 or similarly misusing other testing protocols prevents ECM from using the same or similar avenues to repeat its deceptive conduct.

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<sup>87</sup> The ease of transferring a violative claim to other products supports fencing-in. *See, e.g., Thompson Med. Co.*, 104 F.T.C. at 837. Transferability exists when "other products could be sold utilizing similar techniques." *Jerk, LLC*, 2015 WL 1518891, at \*29; *see also Colgate-Palmolive*, 380 U.S. at 394-95; *Sears, Roebuck & Co. v. FTC*, 676 F.2d 385, 392, 394-96 (9th Cir. 1982). Here, the fencing-in addresses the possibility that similarly deceptive environmental claims could be raised with regard to other products.

## **Appendix A**

### **Examples of ECM's marketing materials**



**CERTIFICATE**  
of  
the Biodegradability of Plastic Products Made by  
[Redacted]  
that Incorporate the  
**ECM MasterBatch Pellet Technology**



*This is to certify that numerous plastic samples, submitted by ECM BioFilms, Inc., have been tested by independent laboratories in accordance with standard test methods approved by ASTM, ISO and other such standardization bodies to determine the rate and extent of biodegradation of plastic materials.*

*A Degradable Plastic is defined (ASTM 1991) as a plastic that is designed to undergo a significant change in its chemical structure under specific environmental conditions resulting in a loss of some properties that may vary as measured by standard test methods appropriate to the plastic and the application in a period of time that determines its classification. A Biodegradable Plastic is defined as a degradable plastic in which the degradation results from the action of naturally occurring microorganisms such as bacteria, fungi and algae.*

*The biodegradation of the submitted plastic samples was tested using ASTM D5209-91, "Standard Test Method for Determining the Aerobic Biodegradation of Plastic Materials in the Presence of Municipal Sewage Sludge", ASTM D5338.98, "Standard Test Method for Determining Aerobic Biodegradation of Plastic Materials under Controlled Composting Conditions", which is equivalent to CEN prEN WI 26108.5, and the ISO 14855 method, "Evaluation of the Ultimate Aerobic Biodegradability and Disintegration of Plastics under Controlled Composting Conditions". ASTM 5511, "Standard Test Method for Determining Anaerobic Biodegradation of Plastic Materials Under High-Solids Anaerobic Digestion Conditions." The results of these tests and the related biodegradation and ecological impact experiments in various environments are contained in the Ecological Assessment of ECM Plastic report dated February 16, 1999, which certifies that plastic products manufactured with ECM additives can be marketed as biodegradable and safe for the environment.*

*This Certificate and the Ecological Assessment of ECM Plastic report, along with Scanning Electron Microscope and other studies that have been conducted since the publication of the Ecological Assessment, all of which use a one percent loading rate for the ECM MasterBatch Pellets rather than the higher additive levels used earlier, have been presented to [Redacted], and may be used by it to validate its claims to the biodegradability and environmental safety of plastic products that it manufactures that are made consistent with the manufacturing guidelines for uses of ECM MasterBatch Pellets presented to it by ECM BioFilms, Inc.*

Dated: January 16, 2007

Certified by: \_\_\_\_\_  
Robert Sinclair, President  
ECM BioFilms, Inc.



# MASTERBATCH PELLETS



ECM BioFilms, Inc.

**Manufacturer of Additives That Make  
Standard Plastic Resins Biodegradable**

ECM BioFilms, Inc. sells additives to plastic product manufacturers which allow them to offer their customers biodegradable plastic products that can be priced competitively with, and have the same mechanical characteristics as, their traditional, non-degradable products.

The revolutionary additive technology, when combined as a one-percent load to the most widely-used plastic resins, renders the finished plastic products biodegradable while maintaining their other desired characteristics.

## Plastic products made with ECM additives

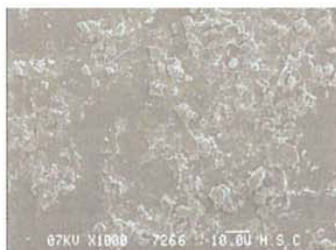
- **Fully biodegrade in 9 months to 5 years.**
- **Fully biodegrade wherever they are disposed of where other things are biodegrading (anaerobically and aerobically):**
  - In Landfills,
  - In Compost (backyard as well as commercial facilities),
  - Buried in the ground or littered,
  - Agricultural and erosion-control settings.
- **Are recyclable.**
- **Can be made with recycled resins.**
- **Do not use heat, light or mechanical stress to break them down.**
- **Do not require special handling (unlike PLA and oxo-degradable products).**
- **Do not contain heavy metals (unlike most oxo-degradable products).**

Plastic Bag Film Samples Buried in Same Soil for a Month

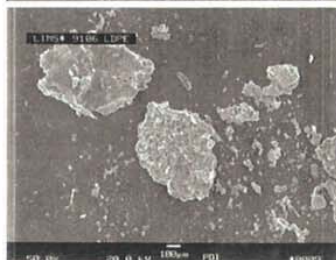
Without ECM



With ECM



The process continues until the plastic products become part of the organic components of the soil just like biodegraded sticks or other pieces of wood become part of the soil.



**Additives for Manufacturing  
Biodegradable Plastic  
Packaging and Products**

## ECM BIOFILMS

### ECM BioFilms, Inc.

Victoria Place – Suite 225  
100 South Park Place  
Painesville, OH 44077, U.S.A.

Website: [www.ecmbiofilms.com](http://www.ecmbiofilms.com)

For Sales or Information, contact:

Phone: 440-350-1400

Fax: 440-350-1444

E-mail: [sales@ecmbiofilms.com](mailto:sales@ecmbiofilms.com)

U.S. Toll Free: 888-220-2792



Plastic products bearing this logo are wholly biodegradable.  
Insist on it for the products you use.





# CERTIFICATE

of the Biodegradability\* of Plastic Products Made by  
[Redacted] which Incorporate the ECM MasterBatch Pellet Technology



*This is to certify that numerous plastic samples, submitted by ECM BioFilms, Inc., have been tested by independent laboratories in accordance with standard test methods approved by ASTM, ISO and other such standardization bodies to determine the rate and extent of biodegradation of plastic materials.*

*ADegradable Plastic is defined (ASTM D883-12) as a plastic that is designed to undergo a significant change in its chemical structure under specific environmental conditions resulting in a loss of some properties that may vary as measured by standard test methods appropriate to the plastic and the application in a period of time that determines its classification. A Biodegradable Plastic is defined as a degradable plastic in which the degradation results from the action of naturally occurring microorganisms such as bacteria, fungi and algae.*

*The bio degradation of the submitted plastic samples were tested using ASTM D5209-91, "Standard Test Method for Determining the Aerobic Biodegradation of Plastic Materials in the Presence of Municipal Sewage Sludge", ASTM D5338-98, "Standard Test Method for Determining Aerobic Biodegradation of Plastic Materials under Controlled Composting Conditions", which is equivalent to CEN prEN WT 261085, and the ISO 14855 method, "Evaluation of the Ultimate Aerobic Biodegradability and Disintegration of Plastics under Controlled Composting Conditions", ASTM D5511, "Standard Test Method for Determining Anaerobic Biodegradation of Plastic Materials Under High-Solids Anaerobic Digestion Conditions." The results of these tests and the related biodegradation and ecological impact experiments in various environments are contained in the Ecological Assessment of ECM Plastic report dated February 16, 1999, which certifies that plastic products manufactured with ECM additives can be marketed as biodegradable\* and safe for the environment.*

*This Certificate and the Ecological Assessment of ECM Plastic report, along with Scanning Electron Microscope and other studies that have been conducted since the publication of the Ecological Assessment, all of which use a one percent loading rate for the ECM MasterBatch Pellets rather than the higher additive levels used earlier, have been presented to [Redacted] and may be used by it to validate its claims to the biodegradability and environmental safety of plastic products that it manufactures that are made consistent with the manufacturing guidelines for uses of ECM MasterBatch Pellets presented to it by ECM BioFilms, Inc.*

Dated: January 26, 2013

Certified by: \_\_\_\_\_  
Robert Sinclair, President  
ECM BioFilms, Inc.

\* Plastic products manufactured with ECM BioFilms' additives will biodegrade in any biologically-active environment (including most landfills) in some period greater than a year.



# MASTERBATCH PELLETS



ECM BioFilms, Inc.

*Manufacturer of Additives That Make  
Standard Plastic Resins Biodegradable\**

ECM BioFilms, Inc. sells additives to plastic product manufacturers which allow them to offer their customers biodegradable\* plastic products that can be priced competitively with, and have the same mechanical characteristics as, their traditional, non-degradable products.

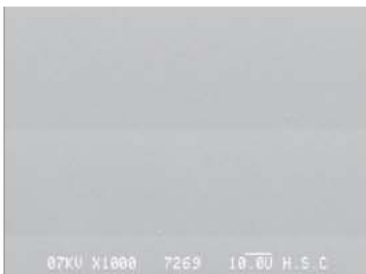
The revolutionary additive technology, when combined as a one-percent load to the most widely-used plastic resins, renders the finished plastic products biodegradable\* while maintaining their other desired characteristics.

## Plastic products made with ECM additives

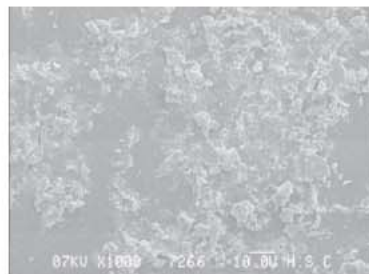
- Fully biodegrade over some number of years.
- Fully biodegrade wherever they are disposed of where other things are biodegrading (anaerobically and aerobically):
  - In Landfills,
  - In Compost (backyard as well as commercial facilities),
  - Buried in the ground or littered,
  - Agricultural and erosion-control settings.
- Are recyclable.
- Can be made with recycled resins.
- Do not use heat, light or mechanical stress to break them down.
- Do not require special handling (unlike PLA and oxo-degradable products).
- Do not contain heavy metals (unlike most oxo-degradable products).

Plastic Bag Film Samples Buried in Same Soil for a Month

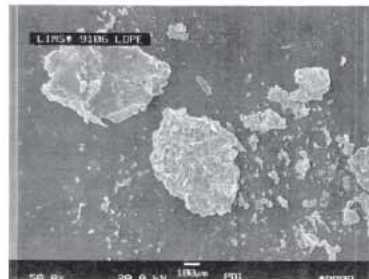
Without ECM



With ECM



The process continues until the plastic products become part of the organic components of the soil just like biodegraded sticks or other pieces of wood become part of the soil and in roughly the same time period..



**Additives for Manufacturing  
Biodegradable\* Plastic  
Packaging and Products**

ECM BIOFILMS

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# Down to Earth™

ALL VEGETARIAN *Organic & Natural*



**THIS BAG IS  
100% BIODEGRADABLE!**



This biodegradable bag breaks down completely into water, carbon dioxide, and harmless humus. It does this with or without oxygen, which makes it particularly suited for disposal in landfills, compost bins, or just buried in the ground. It fully biodegrades in 9 months to 5 years, and can be recycled along with regular plastic bags.



**Honolulu**  
2525 S. King St.  
947-7678

**Pearlridge**  
98-129 Kaonohi St.  
488-1375

**Kailua**  
201 Hamakua Dr.  
262-3838

**Kahului**  
305 Dairy Rd.  
877-2661

ECM-114511



REEF

Max



Recyclable