Greenwashing 2.0

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INTRODUCTION

From the birth of the environmental movement in the 1960s, and through its growth over the last several decades, environmental marketing has never been far behind. Since at least as early as the 1970s, advertisers and marketers have sought to capitalize on consumer concerns about the environment by touting environmentally friendly aspects of products, services, and business practices.[1] This is no surprise, as the group of consumers whose purchasing decisions are influenced by the environmental impact of the products and services they buy has grown to become a large constituency.[2]

Typically, environmental marketing claims took one of two forms, general corporate spin or specific product attributes. Companies often portrayed themselves as responsible stewards of the environment by trumpeting their sustainable business practices.[3] In many instances, the environmental advertising was associated with particular goods for individual consumers, such as energy efficient appliances or biodegradable diapers.[4]

Inevitably, some of the environmental marketing claims proved false or misleading as rhetoric was not put into practice or products failed to deliver the advertised benefits. Green skepticism was one result, and in 1986 environmentalist Jay Westervelt coined the term "greenwashing" to describe marketing or PR intended to deceive consumers into believing that a company is practicing environmentally friendly policies and

1. *See infra* Part I.B.

2. *See* Heidi Tolliver-Nigro, *Green Market to Grow 267 Percent by 2015*, MATTER NETWORK (June 29, 2009), http://www.matternetwork.com/2009/6/green-market-grow-267-percent.cfm ("The market [for] products and services meeting the needs [of green] consumers is currently estimated at $230 billion.").

3. *See* David Hoch & Robert Franz, *Eco-pornography: False Environmental Advertising and How to Control It*, 1 SOUTHEASTERN J.L. STUD. 113, 113 (1992) ("America is awash in a wave of environmentalism, and corporations are loudly proclaiming themselves green. As Time [Magazine] recently observed, 'companies are spending big sums to develop an earth-hugging image.'").

4. *See infra* Parts I.B–C (discussing consumer product greenwashing cases).

procedures.[5] Another response was enforcement against greenwashers, and later, new regulations directed to environmental advertising.[6]

As government agencies and non-governmental organizations investigated, studied, and combated greenwashing activity, the focus was on the existing flow of false or misleading information by companies directed to individual consumers.[7] Indeed, for many years nearly all instances of greenwashing involved business-to-consumer ("B-to-C") scenarios.[8]

But times have changed. Concern about climate change has settled into the public consciousness, and the environmental movement has produced an important offshoot, sometimes called the "clean tech revolution."[9] We are now in the midst of this clean tech revolution—an unprecedented period of sustained innovation and commercialization of a diverse array of green technologies. Over the past decade, substantial and sustained investment in the development and deployment of green technologies—particularly renewable energy generation technologies such as wind turbines, solar panels, and biofuels—has significantly grown the green economy.[10] Solar panels are now nearly as prevalent as green household cleaners.[11]

The clean tech boom has given rise to a much more complex stream of green commercial marketing activity. Much of the green economy today involves business-to-business ("B-to-B") deals, with clean tech companies marketing their green branded equipment, products, and services to developers, utilities, and retailers.[12] It is now just as common for large manufacturers like Vestas to market wind turbines to

5. *See* Glenn Swain, *On the Alert for Misleading Ads*, N.Y. TIMES GREEN BLOG (Nov. 16, 2011, 3:55 PM), http://green.blogs.nytimes.com/2011/11/16/on-the-alert-for-misleading-ads/ ("The term 'greenwashing' was coined by the New York environmentalist Jay Westervelt in a 1986 essay on the hotel industry's recommendation that guests reuse their towels rather than demand fresh ones each day to help the environment.").

6. *See infra* Part I.C (discussing anti-greenwashing enforcement actions and the FTC Green Guides).

7. *See infra* Parts I.C, IV.A (discussing consumer products greenwashing cases, media coverage, research, and scholarly articles about greenwashing and its effects on individual consumers).

8. *See infra* Parts I.B–C (discussing consumer products greenwashing cases).

9. *See, e.g.*, RON PERNICK & CLINT WILDER, THE CLEAN TECH REVOLUTION: THE NEXT BIG GROWTH AND INVESTMENT OPPORTUNITY 1–2 (2007) ("Following on the heels of the computer, Internet, and biotech revolutions, "clean tech" is bringing unprecedented opportunities for wealth creation, high-growth career development, and innovative solutions to a range of global problems.").

10. *See infra* Part II.

11. *See, e.g.*, *Solar Panel Installation & Installers*, CLEANENERGYAUTHORITY.COM, http://www.cleanenergyauthority.com/solar-installers (last visited Feb. 20, 2013) (cataloguing solar installers by state).

12. *See infra* Parts II.B, III.A–B.

commercial consumers such as utilities and developers as it is for Clorox to market green cleaners to households.[13] As clean tech has become big business, green marketing has expanded beyond advertising of products to individual consumers into B-to-B communications regarding clean tech products and services to green commercial consumers.[14]

This Article argues that this period of unprecedented clean tech innovation requires a new paradigm for thinking about greenwashing. Specifically, it is essential that the paradigm shift from almost exclusive focus on B-to-C environmental advertising directed to individual green consumers to an expanded and more nuanced view that also includes B-to-B representations made to commercial consumers. This new paradigm would define greenwashing expansively to include any false or misleading claim regarding the environmental benefit of a product, service, or business practice. Its analysis should not be limited to cases brought by or on behalf of individual consumers, but should also contemplate legal actions by and on behalf of green commercial consumers. Changing the greenwashing paradigm in this way will reflect the commercial realities of the clean tech revolution, and will provide the broader vantage point necessary to identify instances of greenwashing and understand its prevalence and effects.

Part I of this Article provides a brief historical overview of environmental marketing claims, reviews the traditional paradigm greenwashing cases brought in response to such claims, and summarizes the scholarly reaction to the greenwashing phenomenon. Part I also places environmental marketing in context by observing that until the 1990s, there was minimal commercialization of green technologies and essentially no clean tech industry. Part II describes the advent of the clean tech revolution and explains the complex commercial ecosystem it has created. Part II also argues that the maturation of the clean tech industry, which brought many commercial players interacting in B-to-B relationships, provided fertile ground for the emergence of the new greenwashing paradigm cases. In Part III, the Article discusses these new paradigm cases that have accompanied the clean tech boom, catalogs the common types of cases that have arisen under the new

13. *See Business Case Certainty*, VESTAS, http://video.vestas.com/video/2100182/business-case-certainty (last visited July 2, 2013) ("Business case certainty means ensuring a predictable turbine performance year on year."); *see also* Leah Anderson, *Vestas: The World of Wind Energy*, LEAH ANDERSON, http://heyleahhenderson.com/37408/363393/work/vestas-wind-energy (last visited May 14, 2013) (detailing the "Science of Certainty" campaign around the 2012 launch of a new Vestas wind turbine).

14. *See id.*

paradigm, and describes the importance of these cases. This Part also takes note of the greenwashing "blind spot" in the media, research organizations, and commentators, none of which have focused attention on green commercial consumer cases. Part IV discusses the implications of the new paradigm cases, recommends some areas of inquiry for future research, and suggests some policies for monitoring and combating the new paradigm cases.

I. GREENWASHING 1.0

This Part provides an historical overview of environmental marketing and presents the evolution of legal action against false and misleading environmental marketing claims. It covers the birth and growth of greenwashing and legal responses to it from the 1970s to the present day. During most of this period the clean tech industry did not exist, and commercial activity in green technology goods was negligible.[15] As such, nearly all of the greenwashing cases from the early 1970s to the end of the 1990s were traditional paradigm cases involving B-to-C marketing of consumer products.[16]

A. The Environmental Movement Creates Green Marketing

Though hard to believe today, there once was a time when advertising and marketing were nearly devoid of environmental claims. The modern environmental movement was born in the 1960s,[17] and it was not until the 1970s that firms began to integrate environmental concerns into business and marketing strategies.[18] Then, due to a variety of catalysts, environmental marketing grew substantially in the 1980s.[19]

15. *See infra* Part I.D.

16. *See infra* Part I.B–C (discussing consumer products greenwashing cases).

17. *See* Ajay Menon & Anil Menon, *Enviropreneurial Marketing Strategy: The Emergence of Corporate Environmentalism as Market Strategy*, 61 J. MKTG. 51, 52 (1997) ("Environmental historians trace the birth of modern environmental activism in the United States to 1962, the year Rachel Carson's book, *The Silent Spring*, was published.") (internal citations omitted).

18. *See id.* ("The natural environment did not have a significant impact on the practice of marketing until the 1970s."); *see also id.* at 53 ("[T]he period from 1970–1985 saw the beginning of integration, albeit weak, of environmental concerns and business and marketing strategies through what Fischer and Schot (1993) call *resistant adaptation*, or what Varadarajan and Menon (1988) call *mandated corporate responsibility*.") (emphasis in original).

19. *See* David Gibson, Comment, *Awash in Green: A Critical Perspective on Environmental Advertising*, 22 TUL. ENVTL. L.J. 423, 428 (2009) ("During the early 1980s, however, environmental marketing experienced a surge in popularity and the complexity of environmental marketing issues proved too complex for the existing rules to adequately address."); *see also* Roscoe B. Starek III, Comm'r, Fed. Trade Comm'n, Address before the Intellectual Property Law Committee of the

This growth was largely attributable to certain changes in the environmental movement, government policy, and corporate strategy. One reason for the surge was a shift in strategy of the environmental movement.[20] During this period, environmental organizations became less ideological and more professional and pragmatic.[21] They also forged more constructive relationships with policymakers and with each other.[22] As a result of this collaboration, the environmental movement channeled its influence into generating tangible solutions.[23]

Increased governmental regulation of business activities impacting the environment was a significant factor in corporate decision making.[24] Two major legislative achievements of this time were the Clean Air Act[25] and the Clean Water Act.[26] Signed into law in 1970, the Clean Air Act laid out the Environmental Protection Agency's ("EPA") responsibilities for improving air quality and protecting the ozone layer.[27] The Clean Water Act consisted of major amendments to a 1948 environmental law and established the framework for regulating surface water quality and pollutant discharge into the waters of the United States.[28] Both continue to be viewed as landmark pieces of environmental legislation.[29]

Chicago Bar Association Young Lawyers Section: Brief Review of the FTC's Environmental and Food Advertising Enforcement Programs (Oct. 13, 1995), *available at* http://www.ftc.gov/speeches/starek/rbsgre.shtm ("Although the FTC prosecuted some environmental claims in the 1970s, it was really in the late 1980s and early 1990s that environmental marketing mushroomed.").

20. *See* Menon & Menon, *supra* note 17, at 54 ("The environmental movement also changed in two significant ways in the mid-1980s. First, it adopted a professional rather than an ideological philosophy. Second, as adversaries sought new ground on which to become allies, the relationships between the environmentalists and the lawmakers changed from confrontational to accommodative.").

21. *Id.*

22. *Id.* ("[A]s adversaries sought new ground on which to become allies, the relationships between the environmentalists and the lawmakers changed from confrontational to accommodative.") (internal citation omitted).

23. *Id.* at 54.

24. *Id.* at 53.

25. Clean Air Act, 42 U.S.C. §§ 7401–7671q (2012).

26. Clean Water Act, 33 U.S.C. §§ 1251–1387 (2012).

27. *See Clean Air Act*, EPA, http://www.epa.gov/air/caa/ (last updated Feb. 17, 2013) ("The Clean Air Act is the law that defines EPA's responsibilities for protecting and improving the nation's air quality and the stratospheric ozone layer.").

28. *See Summary of the Clean Water Act*, EPA, http://www.epa.gov/regulations/laws/cwa.html (last updated Feb. 24, 2013) (describing the Clean Water Act as the primary statute for regulating discharges of pollutants into U.S. waters and that an outgrowth of earlier legislation, called the Federal Water Pollution Act).

29. *See 40th Anniversary of the Clean Air Act*, EPA, http://www.epa.gov/air/caa/40th.html (last updated Jan. 21, 2011) ("The U.S. Environmental Protection Agency is celebrating the 40th anniversary of the signing of the Clean Air Act Amendments, a landmark piece of legislation that has led to significant environmental and public health benefits across the United States."); Carol M.

Corporate environmentalism also developed during this period.[30] Important for this discussion is the fact that corporations changed their focus from environmental factors arising in the context of inputs and internal activity of the firm to a more results- or output-oriented approach.[31] One of those outputs was marketing, so this shift gave rise to more environmental marketing as well as new experimental approaches to solve environmental problems.[32]

Perhaps most salient was a significant demand-side increase in consumer desires to make environmentally responsible purchasing decisions.[33] Data from a number of contemporaneous consumer surveys reflected this trend. For instance, consumers indicated they would avoid products they thought were harmful to the environment.[34] The polls also showed that consumers would buy products based on environmental marketing messages and would actually pay more for environmentally beneficial products.[35] In sum, the 1980s and early 1990s was a time of rapid and substantial growth in both supply of and demand for products marketed as having reduced environmental impact.

B. Early Greenwashing Cases: Establishing the Traditional Paradigm

Some of the earliest instances of suspect environmental marketing claims occurred in the 1970s, long before concern about climate change had settled into the public consciousness.[36] At that time, those contesting deceptive environmental marketing were focused on protecting individual consumers from advertising claims made about consumer

Browner, Adm'r, Envtl. Prot. Agency, Remarks Prepared for Delivery: 25th Anniversary of the Clean Water Act (Oct. 17, 1997), *available at* http://yosemite.epa.gov/opa/admpress.nsf/a162fa4bfc0fd2ef8525701a004f20d7/872d86a1679743df8525701a0052e3a5!OpenDocument&Highlight=0 ("The Clean Water Act passed both Houses of Congress by overwhelming, bipartisan margins. And America finally got serious about addressing the pollution threat and restoring the quality of the nation's waters. By any measure, this landmark legislation has been hugely successful.").

30. Menon & Menon, *supra* note 17, at 53.

31. *Id.* ("Free market environmentalism shifted the emphasis of the regulations from what was an input or activity orientation to an output or results orientation.").

32. *Id.* ("This shift of emphasis broadened the context for environmental marketing, and firms began experimenting with alternate, customized strategies and approaches to resolve their environmental problems.") (internal citations omitted).

33. Starek III, *supra* note 19 ("During [the late 1980s and 1990s], consumer interest in buying environmentally compatible products grew dramatically. Various consumer polls found that shoppers changed their purchasing decisions based on concerns about the environment.").

34. *Id.*

35. *Id.*

36. *See, e.g.*, Cartt v. Superior Court, 124 Cal. Rptr. 376, 378 (Ct. App. 1975) (A class action about fuel additives mentions the environment only once in passing).

products. The vast majority of published legal decisions from this period involved accusations of false advertising brought by and on behalf of individual consumers.

A significant early environmental marketing case involved advertising claims by Standard Oil about a gasoline additive called Chevron F-310.[37] As the new decade commenced, the oil company began an extensive advertising campaign touting the fuel additive as an environmentally friendly product.[38] In January of 1970, advertisements appeared in various California media representing that Chevron F-310 would "produce a significant reduction of exhaust emissions and of resulting air pollution."[39]

A few months later, a class of consumers who had collectively purchased at least 300 million gallons of F-310 gasoline filed a class action suit against Standard Oil alleging that the advertising claims were false.[40] Specifically, Cartt, the named plaintiff, alleged that Chevron F-310 did not alter exhaust emissions, or worse, actually harmed automobiles and the environment.[41] The litigation was delayed for several years pending a separate proceeding before the U.S. Federal Trade Commission ("FTC") involving similar charges in connection with the same ads.[42] In a third, unrelated proceeding before the FTC, a pair of individuals filed a complaint alleging that the F-310 ads were deceptive and misleading.[43]

Another action in the early 1970s sought to protect individual consumers from allegedly misleading advertisements by certain automakers and gasoline companies.[44] Friends of the Earth petitioned the Federal Communications Commission in response to ads by Ford touting automobile "performance," ads by Chevrolet stressing the great value of the size of its automobiles, and an ad for a "cold-weather" gasoline.[45] The group argued that the products contributed to air

37. Neckritz v. FCC, 502 F.2d 411 (D.C. Cir. 1974) (petition to review a Federal Communications Commission order regarding a complaint about Standard Oil of California advertisements for Chevron gasoline with the F-310 additive); *see also* Cartt, 124 Cal. Rptr. at 378.

38. Cartt, 124 Cal. Rptr. at 378 ("[Plaintiff] alleged, in substance, that starting in January 1970 Standard extensively advertised the value of 'Chevron F-310' gasoline in various media.").

39. *Id.*

40. *Id.* ("In April 1970, plaintiff Cartt, purporting to represent herself and all Standard credit card purchasers, filed her class action. She alleged, in substance, that starting in January 1970 Standard extensively advertised the value of 'Chevron F-310' gasoline in various media.").

41. *Id.*

42. *Id.*

43. *See* Neckritz v. FCC, 502 F.2d 411, 412–13 (D.C. Cir. 1974) .

44. Friends of the Earth v. FCC, 449 F.2d 1164, 1164–65 (D.C. Cir. 1971).

45. *Id.* at 1166.

pollution and that the ads deceptively signaled that the products presented no health hazards.[46]

Toward the end of the decade, the FTC warned consumers about potentially misleading advertisements in connection with a variety of devices and features intended to improve fuel efficiency.[47] The products included air-bleed devices that purported to add air to the fuel mixture, pills for lowering energy friction, oil additives to reduce friction, vapor injectors to add water vapor to the carburetor, and spark-intensifiers, which were supposed to promote better combustion.[48] Testing by the EPA and other organizations revealed that a number of the advertised devices did not provide significant fuel economy benefits.[49]

These types of false or misleading claims directed at individual consumers continued into the 1980s. In 1983, the U.S. Postal Service stopped the mail of National Fuelsaver Corporation because of false advertising in connection with the company's mail-order Gasaver product.[50] National Fuelsaver's ads claimed the product passed an EPA test and could improve fuel economy by up to 48.3%.[51] According to the Postal Service, those claims were false because the Gasaver's fuel economy boost was only 5%.[52]

Even when climate change began to appear as an occasional impetus for false advertising challenges, the disputed ads fell within the traditional greenwashing paradigm. In the late 1980s, the Association for the Conservation of Energy protested to Britain's Advertising Standards Authority about ads by British Gas that claimed that natural gas is "earth's cleanest fuel."[53] The environmental group objected that the ads

46. *Id.* at 1165–66 ("Petitioners asserted, contrarily, that these products were especially heavy contributors to air pollution . . . . They reasserted their contentions that the large-car and highpowered gasoline advertisements carried by the licensee were designed to promote the idea that these products presented no health hazards in fact.").

47. Jeffrey Mills, *Washington Dateline*, ASSOCIATED PRESS, Aug. 28, 1979 ("A host of 'gasoline-saving' gadgets is being touted to the public, but the government says it has not yet found one that actually improves mileage. The Federal Trade Commission says it knows of about 100 such devices now on the market, frequently with heavy advertising . . . .").

48. *Id.*

49. *Id.* ("'Although all devices on the market haven't been tested by the government, controlled scientific tests on a number of them do not show any significant improvement in fuel economy for cars in which they were installed,' the FTC said. Larry Kahn, author of the fact sheet, said Tuesday that at least six types of devices have been tested by the Environment Protection Agency . . . .").

50. Jeffrey Mills, *Postal Service Acts Against 'Gasaver' Mail-Order Product*, ASSOCIATED PRESS, May 6, 1983 (on file with the Journal).

51. *Id.*

52. *Id.*

53. Amanda Brown, *British Gas Accused Over 'Clean Fuel' Adverts*, PRESS ASS'N, Oct. 16, 1989 (on file with the Journal).

failed to mention that using natural gas releases methane, a greenhouse gas, into the atmosphere.[54] The group also contended that British Gas was misleading the public by omitting any mention of available alternative energy sources that are cleaner than natural gas.[55] By bringing the protest, the environmental group sought to protect individual consumers targeted by the corporate spin.[56]

C. The Growth of Traditional Paradigm Cases and Government Responses

The 1990s was a time of rapid and substantial growth in environmental marketing, but also a time of rapid response by government watchdogs on behalf of individual consumers. By the late 1980s, states were enforcing their consumer protection laws, as well as enacting new advertising regulations.[57] The federal government also became increasingly active in the area. Most notably, in response to pressure from state attorneys general and industry groups, in 1991 the FTC conducted hearings to create federal guidelines for environmental advertising and marketing claims.[58] The FTC published the first iteration of these "Green Guides" in 1992.[59] By presenting rules and discussing hypothetical illustrative examples, the Green Guides provide a framework for green marketers to formulate permissible environmental benefit claims.[60] The Green Guides state that claims "should be presented in a way that makes clear whether the environmental attribute or benefit being asserted refers to the product, the product's packaging, a service or to a portion or component of the product, package or service . . . ."[61] Claims should not overstate the environmental benefit, either expressly or by implication.[62] The relative specificity or generalization is a critical factor in determining the deceptiveness of an

54. *Id.*

55. *Id.*

56. *Id.* ("Stewart Boyle, ACE energy and environment programme director, said today: 'British Gas has not only been spending millions of pounds of gas users' money in its advertising, it has been blatantly misleading them through its false claims regarding environmental advantages of gas as a fuel.'").

57. Gibson, *supra* note 19, at 429.

58. *Id.*

59. Guides for the Use of Environmental Marketing Claims, 16 C.F.R. § 260 (2013).

60. *Id.*

61. *Id.* § 260.6(b).

62. *Id.* § 260.6(c).

environmental claim, and the Green Guides warn against claims of general environmental benefits.[63]

Although the Green Guides are not binding on the agency or the public,[64] the FTC can enforce them[65] and initiated an aggressive campaign against deceptive environmental advertising in the 1990s. Perhaps the largest single class of traditional paradigm greenwashing cases to date, the FTC's environmental enforcement actions in the 1990s are a collection of challenges to environmental marketing of consumer products on behalf of individual green consumers.[66] These actions included multiple cases targeting ads for plastic grocery and trash bags,[67] many challenges to ads for aerosol cleaning and beauty products,[68] and a

63. *See id.* § 260.7(a) ("[i]t is deceptive to misrepresent, directly or by implication, that a product, package or service offers a general environmental benefit . . . [u]nqualified general claims of environmental benefit are difficult to interpret, and depending on their context, may convey a wide range of meanings to consumers . . . .").

64. *See id.* § 260.1 ("[The guides] do not confer any rights on any person and do not operate to bind the FTC or the public.").

65. *See id.* ("The Commission, however, can take action under the FTC Act if a marketer makes an environmental claim inconsistent with the guides.").

66. *See generally The FTC's Environmental Cases*, FTC, http://www.ftc.gov/bcp/grnrule/environ-cases.htm (last visited Jan. 3, 2013) (listing the FTC environmental cases from 1990–2000).

67. *See, e.g.*, BPI Envtl., Inc., 118 F.T.C. 930, 930–33 (1994), 1994 WL 16011113, at *1–3 (challenging claims that BIO-SAC and PHOTO-SAC plastic grocery store bags are "degradable" and "biodegradable"); N. Am. Plastics Corp., 118 F.T.C. 632, 633–37, 1994 WL 16011102, at *1–2 (challenging "biodegradable" and landfill benefit claims for EnviroGard plastic trash bags); Mobil Oil Corp., 116 F.T.C. 113, 113–18, 1993 WL 13009606, at *1–2 (1993) (challenging claims about Hefty Degradable plastic trash bags); First Brands, Corp., 115 F.T.C. 1, 1–6, 1992 WL 12011023, at *1–2 (1992) (challenging claims that Glad plastic trash bags are "degradable," "safe for the environment" and "environmentally friendly).

68. *See, e.g.*, RBR Prods., Inc., 61 Fed. Reg. 42616-01, 42, 617 (Fed. Trade Comm'n Dec. 10, 1996) (notice of proposed consent agreement) (challenging claims that an aerosol fingernail glue drying spray is an "environmental formula" and that the aerosol can is "recyclable"); Mattel, Inc., 119 F.T.C. 969, 969–72, 1995 WL 17012633, at *1–2 (1995) (challenging the claim that an aerosol foam soap product "Contains no Chlorofluorocarbons (CFC's)"); Creative Aerosol Corp., 119 F.T.C. 13, 13–18, 1995 WL 17012577, at *1–4 (1995) (challenging claims that an aerosol foam soap product is "environmentally safe" and "contains no fluorocarbons" and claims that the aerosol can and cap are "recyclable"); G.C. Thorsen, Inc., 116 F.T.C. 1179, 1179–86, 1993 WL 13009670, at *1–2 (1993) (challenging claims that each of the "AirDuster" and "Airjet II" aerosol cleaning products is "ozone friendly," "environmentally responsible," and "does not contain CFCs or other ozone damaging components"); Texwipe Co., 116 F.T.C. 1169, 1169–74, 1993 WL 13009669, at *1–3 (1993) (challenging claims that aerosol cleaning products are "ozone safe" and "environmentally safe"); PerfectData Corp., 116 F.T.C. 769, 769–72, 1993 WL 13009651, at *1–3 (1993) (challenging claims that the PerfectDuster II aerosol cleaning product is "ozone friendly," "with ozone guard," and "contains no ozone depleting CFCs"); Tech Spray Inc., 115 F.T.C. 433, 433–40, 1992 WL 12011045, at *1–3 (1992) (challenging claims that aerosol cleaning products are "CFC free," "ozone friendly formula," and "ozone friendly"); Jerome Russell Cosmetics, U.S.A., Inc., 114 F.T.C. 514, 514–19, 1991 WL 11008538, at *1–2 (1991) (challenging claims that an aerosol hair spray is "ozone safe," "ozone friendly," and "contains no fluorocarbons").

host of actions involving packaging, tableware and food service products.[69] Other products the FTC targeted for false or misleading environmental marketing claims during this period include disposable diapers,[70] laundry detergent products,[71] and gasoline, motor oil, and automobile care products.[72]

Private actions against greenwashing also continued in the 1990s. Though there were occasional instances of litigation between competing

69. *See, e.g.*, Amoco Foam Prods. Co., 118 F.T.C. 194, 194–200, 1994 WL 16011087, at *1–2 (1994) (challenging claims that polystyrene foam plates, cups, and other food service products are "recyclable"); Keyes Fibre Co., 118 F.T.C. 150, 150–64, 1994 WL 16011085, at *1–4 (1994) (challenging claims that Chinet paper plates are "recyclable," "biodegradable," and "compostable" in municipal solid waste composting facilities); AJM Packaging Corp., 118 F.T.C. 56, 56–60, 1994 WL 16011080, at *1–2 (1994) (challenging claims that Nature's Own Green Label paper plates are "biodegradable" and "recyclable"); LePage's Inc., 118 F.T.C. 31, 31–37, 1994 WL 16011078, at *1–3 (1994) (challenging claims that the plastic dispensers and paperboard packaging for adhesive tape are "recyclable" and the tape product is "biodegradable"); Oak Hill Indus. Corp., 118 F.T.C. 44, 44–50, 1994 WL 16011079, at *1–2 (1994) (challenging claims that plastic tableware and plastic film packaging are "recyclable"); America's Favorite Chicken Co., 118 F.T.C. 1, 1994 WL 16011076 1–3, at *1–2 (1994) (challenging claims that fast food paper packaging that becomes food-contaminated is "recyclable"); Mr. Coffee, Inc., 117 F.T.C. 156, 156–63, 1994 WL 16010981, at *1–3 (1994) (challenging claims that Mr. Coffee filters are made by a "chlorine-free" manufacturing process producing no harmful byproducts and are made with "recycled paper" and that the product's packaging is "recyclable"); White Castle Sys., Inc., 117 F.T.C. 1, 1–4, 1994 WL 16010965, at *1–2 (1994) (challenging claims that fast food paper packaging that becomes food-contaminated is "recyclable");

70. *See* RMED Int'l, Inc., 115 F.T.C. 572, 572–83, 1992 WL 12011051, at *1–3 (1992) (challenging claims that Tendercare disposable diapers are "biodegradable"); Am. Enviro Prods., Inc., 115 F.T.C. 399, 399–405, 1992 WL 12011043, at *1–2 (1992) (challenging "biodegradable" and landfill benefit claims for Bunnies disposable diapers).

71. *See* Stipulated Final Judgment, FTC v. OneSource Worldwide Network, Inc., 3-99 CV1494-L (N.D. Tex. July 1, 1999), *available at* http://www.ftc.gov/os/1999/07/onesourcesfj.pdf (stipulating monetary and injunctive relief arising from OneSource's false claims that liquid-filled discs are an effective and non-polluting substitute for laundry detergents); Complaint ¶¶ 21–24, FTC v. Tradenet Marketing, Inc., No. 99-944-CIV-T-24B (M.D. Fla. Apr. 21, 1999), *available at* http://www.ftc.gov /os/1999/04/cmplt1.htm (alleging as false claims that liquid-filled balls would clean laundry without polluting the earth's waterways).

72. *See* Dura Lube Corp. et al., Docket No. 9292, 2000 WL 561696 (Fed. Trade Comm'n, May 3, 2000) (ordering monetary and injunctive relief arising from claims that a motor oil additive reduces emissions); Blue Coral, Inc. et al., Docket No. 9280, 1997 WL 409304 (Fed. Trade Comm'n, Jul. 23, 1997) (ordering Blue Coral to cease and desist from making claims that an engine treatment product reduces toxic emissions); Amoco Oil Co., 121 F.T.C. 561, 561–83, 1996 WL 33412051, at *1–4 (1996) (challenging claims that "Crystal Clear Amoco Ultimate" gasoline provides better engine performance and environmental benefits than other premium gasolines); Safe Brands Corp., 121 F.T.C. 379, 379–99, 1996 WL 33412042, at *1–7 (1996) (challenging claims that "Sierra" antifreeze is, *inter alia*, environmentally safe, safer for the environmental than conventional antifreeze, and recyclable); Nationwide Indus., 116 F.T.C. 853, 853–58, 1993 WL 13009657, at *1–2 (1993) (challenging claims that "Snap Fix-a-Flat" aerosol tire inflator products contain "no CFC" and are "environment friendly").

businesses,[73] more common were individual consumer lawsuits and consumer class actions.[74] In an example of these traditional greenwashing cases, a class of individual consumers sued the Mobil Chemical Company ("Mobil"), alleging false advertising in connection with the company's advertisements for Hefty "degradable" garbage bags.[75] The class action asserted that Mobil's statement that the bags would "break down into harmless particles even after they are buried in a landfill" was false and misleading because the bags would not actually degrade, but would instead break into smaller, yet still environmentally harmful, plastic particles.[76]

With the prevalence of traditional paradigm greenwashing cases in the 1990s, it is no surprise that academic literature from this period primarily addressed this view. Contemporaneous scholarly articles on greenwashing typically described the phenomenon, analyzed the existing regulatory framework for combating it, and offered ideas for controlling it.[77] Scholars examining this issue consistently focused on environmental marketing claims directed to individual consumers and their effects on those consumers. David Hoch and Robert Franz decried the "consumer skepticism" that "stems in large part from false environmental advertising."[78] Hoch and Franz also noted consumers' frustration at being unable to determine whether products are truly ecological or to comprehend the meanings of commonly used terms such as "biodegradable" and "recyclable."[79] "To consume 'greenly,'" they observed, consumers "must receive accurate information."[80] E. Howard Barnett emphasized the impact environmental marketing claims have on

73. *See, e.g.*, Fuller Bros., Inc. v. Int'l Mktg., Inc., 870 F. Supp. 299, (D. Or. 1994).

74. *See, e.g.*, Delgozzo v. Kenny, 266 N.J. Super. 169, 195 (App. Div. 1993) (directing certification of class of consumers challenging Blueray "blue flame" boilers advertised as cleaner and more efficient than traditional boilers); Brittingham v. Mobil Corp., 943 F.2d 297, 297 (3d Cir. 1991) (affirming summary judgment for defendant of dismissal of RICO claims related to advertising of Hefty garbage bags as "degradable").

75. *See* Brittingham, 943 F.2d at 299 ("Plaintiffs are individual consumers who purchased the bags.").

76. *See id.*

77. *See, e.g.*, E. Howard Barnett, *Green with Envy: The FTC, the EPA, the States, and the Regulation of Environmental Marketing*, 1 ENVTL. LAW. 488, 495-504, 507-510 (1995) (discussing the various regulations available to enforce truth in environmental marketing and arguing for enactment of uniform federal regulations); Hoch & Franz, *supra* note 3, at 113-116, 128 (describing false environmental advertising and calling for new regulations and guidelines defining green marketing terms and legislation imposing punitive measures on "eco-pornographic" advertising).

78. *See* Hoch & Franz, *supra* note 3, at 116.

79. *See id.*

80. *Id.* at 128.

consumer purchasing decisions.[81] He discussed a survey finding that a large percentage of consumers would pay more for environmentally friendly products and regularly avoid environmentally detrimental products.[82]

The turn of the century saw no slowdown in traditional paradigm greenwashing cases. Government agencies continued to bring actions on behalf of individual green consumers and ruled against several purportedly green advertisements.[83] In Britain, the Advertising Standards Authority required the automaker Lexus to pull an ad for its hybrid sport utility vehicle because the ad included the phrase "High Performance. Low Emissions. Zero Guilt."[84] Similarly, a probe by the Australian Consumer and Competition Commission forced Goodyear to admit that its Eagle LS2000 tire does not live up to claims made on the company's Australian website that the tire is "environmentally-friendly," has "minimal environmental impact," improves fuel economy, and is produced by a process that results in reduced carbon dioxide emissions.[85]

In the United States, the Department of Energy ("DOE") went after LG Electronics for providing erroneous energy usage measurements in order to receive the Energy Star certification on a number of its refrigerator models.[86] As it turned out, the refrigerators used more energy than advertised and did not actually meet the efficiency standards required to earn the certification.[87] The DOE and LG reached a settlement

81. *See* Barnett, *supra* note 77, at 493.

82. *See id.* at 494 ("The Cambridge study determined that eighty percent of consumers were willing to pay a little more for an environmentally-friendly product. More significantly, almost sixty percent of those surveyed claimed to avoid products for environmental reasons on a regular basis.") (internal quotation marks omitted).

83. *See, e.g.*, Press Release, Fed. Trade Comm'n, FTC Announces Actions Against Kmart, Tender and Dyna-E Alleging Deceptive 'Biodegradable' Claims (June 9, 2009), *available at* http://www.ftc.gov/opa/2009/06/kmart.shtm.

84. ADVER. STANDARDS AUTH., EVENT REPORT: ENVIRONMENTAL CLAIMS IN ADVERTISING. IS GREEN A GREY AREA? 8 (2008), *available at* http://www.asa.org.uk/~/media/Files/ASA/Reports/EnvironmentalClaimsSeminarReport.ashx.

85. Press Release, Austl. Competition & Consumer Comm'n, Goodyear Tyres Apologises, Offers Compensation for Unsubstantiated Environmental Claims (June 26, 2008), *available at* http://www.accc.gov.au/media-release/goodyear-tyres-apologises-offers-compensation-for-unsubstantiated-environmental-claims.

86. *See* LG Elec. U.S.A., Inc. v. Dep't of Energy, 679 F. Supp. 2d 18, 24–25 (D.D.C. 2010); *see also* Press Release, LG Elec. U.S.A., Inc., LG Electronics to Temporarily Remove Energy Star Label from Certain French Door Refrigerators (Jan. 19, 2010), *available at* http://www.lge.com/us/press-release/article/lg-electronics-to-temporarily-remove-energy-star-label-from-certain-french-door-refrigerators.jsp.

87. LG Elec. U.S.A., 679 F. Supp. 2d at 24–25.

agreement to adopt appropriate remedies.[88] In 2010, the FTC sued light-emitting diode ("LED") maker Lights of America for alleged misleading claims regarding the product life of certain LED lamps and false and unsubstantiated light output comparisons between its LED lighting products and incandescent lamps.[89] Some states got involved as well, with California enforcing a 2008 law banning the use of terms such as "biodegradable," "degradable," and "decompostable" in connection with plastic food or beverage containers and imposing standards for labeling food or beverage containers made from other materials.[90]

There were also many private actions in the 2000s involving alleged deceptive advertising directed at individual consumers. These cases continued even after the advent of the clean tech revolution and are likely to continue in the future.[91] The products at issue included cars, cleaning supplies, and plastic bottles.

Automakers' representations about the fuel efficiency of their vehicles were hot topics of traditional greenwashing litigation. Two lawsuits—an individual state court lawsuit and a federal class action—targeted the Honda Civic Hybrid.[92] In the first suit, the plaintiff claimed that the vehicle was achieving less than half the miles per gallon ("MPG") than the EPA estimate[93] of forty-eight MPG when driving on the highway.[94] Statements made by a Honda employee about the need to drive in a specialized manner[95] diverged sharply from a Civic Hybrid brochure telling drivers they do not have to do "anything special" to get "terrific gas mileage"[96] and instructing them to "[j]ust drive the Hybrid like [one] would a conventional car and save on fuel bills."[97] In addition,

88. Agreement between the U.S. Dep't of Energy and LG Elec., U.S.A., Inc. (Jan. 14, 2008), *available at* http://energy.gov/sites/prod/files/edg/news/archives/documents/DOE_LG_Signed_Settlement_Agreement.pdf.

89. FTC v. Lights of Am., Inc., 760 F. Supp. 2d 848, 850 (C.D. Cal. 2010).

90. *See* Complaint ¶¶ 11–27, California v. ENSO Plastics, LLC, No. 00518091 (Cal. Super. Ct. Oct. 26, 2011), *available at* http://ag.ca.gov/cms_attachments/press/pdfs/n2577_complaint.pdf.

91. *See infra* Part IV.A.

92. *See generally* True v. Am. Honda Motor Co., 520 F. Supp. 2d 1175 (C.D. Cal. 2007); Paduano v. Am. Honda Motor Co., 88 Cal.Rptr. 3d 90 (2009).

93. *See id.* at 97–98 ("Paduano drove the vehicle for approximately a year and became increasingly dissatisfied with his vehicle's fuel economy performance. During this time, the vehicle achieved less than half of the EPA estimated fuel economy level."); *see also* 49 U.S.C. §§ 32,901–19 (2012) (establishing a federal regulatory scheme for measuring and disclosing automobile fuel economy ratings); *see also id.* § 32,904 (2012) (the "Administrator of the Environmental Protection agency shall calculate the average fuel economy of a manufacturer").

94. *Paduano*, 88 Cal. Rptr. 3d at 97–98.

95. *See id.* at 97.

96. *Id.* at 106–07.

97. *Id.* at 104–05.

in 2007 plaintiffs filed a class action against Honda, accusing the company of representing that the Civic Hybrid achieved fuel efficiency of forty-nine to fifty MPG when Honda knew or should have known that the actual performance of the vehicle was up to 53% below the advertised fuel efficiency.[98] Plaintiffs also accused Honda of altering federally mandated disclaimer language regarding fuel efficiency estimates that appears on the standard sticker affixed to all new automobiles.[99]

In 2012, a host of consumer class actions targeted Hyundai and Kia, accusing the automakers of making false or misleading claims that certain model vehicles achieve gas mileage in the forty MPG range.[100] According to some of the complaints, an EPA investigation prompted by consumer inquiries found that the gas mileage was overstated in seven Hyundai models and six Kia models, with as much as a six MPG discrepancy in some vehicles.[101] The trend continued and extended to plug-in electric vehicles in 2012 with a class action suit accusing Nissan of making misleading representations and omissions regarding the battery capacity and driving range of the LEAF, its new plug-in electric model.[102] The complaint alleges that the automaker inflated battery life claims and miles per charge numbers.[103]

Turning from cars to cleaning supplies, another green consumer class action targeted the household cleaner Windex for alleged deceptive advertising. In March 2009, an individual consumer filed a proposed class action suit accusing SC Johnson & Son of falsely implying that a neutral third party endorsed Windex by affixing a Greenlist label and certification statement on the product when, in fact, the Greenlist

98. First Amended Complaint ¶¶ 3–6, True v. Am. Honda Motor Co., 520 F. Supp. 2d 1175 (C.D. Cal. 2007) (No. EDCV 07-287-VAP (OPx)), ECF No. 48.

99. *Id.* ¶ 19.

100. *See* In re Hyundai and Kia Fuel Econ. Litig., No. 2424 (U.S.J.P.M.L. Nov. 19, 2012) (consolidating various consumer cases into one multi-district litigation).

101. *See* Complaint ¶ 31, Graewingholt v. Hyundai Motor Am., Inc., No. 8:12-cv-01963-JVS-JPR (C.D. Cal. Nov. 9, 2012) [hereinafter Graewingholt Complaint].

102. *See* Complaint ¶¶ 1 and 7, Klee v. Nissan N. Am., Inc., No. 2:12-cv-08238-DDP-PJW (C.D. Cal. Sep. 24, 2012).

103. *See id.* ¶ 12 ("While Nissan's owner's manual provides that the Leaf may lose *20%* of battery capacity over *five (5) years* of operation, in fact, class members' vehicles, especially those vehicles exposed to warm climates, are losing over *27.5%* battery capacity within the first *one (1) to two (2) years of operation*.") (emphasis in original); *see id.* ¶¶ 39–40 ("Nissan misrepresented and failed to disclose to Class Members prior to purchase that Nissan's estimated 100-mile range is based on a *full* charge; that Nisan [sic] itself recommended that vehicle owners *not* charge their batteries to 100% . . . .") (emphasis in original).

designation is owned and administered by the company itself.[104] In another proposed class action lawsuit filed in 2011 against Fiji Water Company, plaintiff alleged that a "Green Drop" design on Fiji's water bottles misrepresents the product as environmentally superior to other bottled water and falsely connotes approval by independent third-party organizations.[105]

In sum, the first three decades of environmental marketing cases were based almost exclusively on the traditional greenwashing paradigm, brought by or on behalf of individual green consumers in connection with advertising for consumer products. Such cases extended into the twenty-first century and in all likelihood, will continue to be prevalent into the future even as the clean tech revolution progresses.

D. Minimal Clean Tech Commerce

There is a simple reason that the traditional greenwashing paradigm—the focus on false or misleading environmental marketing of consumer products to individual consumers—held throughout the 1970s, 1980s and 1990s. The vast majority of commerce in purportedly environmentally friendly products during that time was in connection with "biodegradable" trash bags and diapers, "recyclable" tableware, "ozone-friendly" beauty product containers, "non-polluting" cleaning supplies, and "fuel efficient" gasoline and additives, which are made for and marketed to individual consumers.[106] There simply were very few green products or technologies being produced or consumed in significant volumes outside of the consumer context during that period.[107]

Certainly, there was no clean tech industry as we know it today.[108] In fact, it was long before the term "clean technology" had been coined.[109] In the 1970s, renewable energy technologies were at a very early stage of development and remained the province of small players.[110] One

104. *See* Complaint ¶ 6–7, Koh v. SC Johnson & Son, Inc., No. 09-cv-00927 (N.D. Cal. Mar. 2, 2009).

105. Hill v. Roll Int'l Corp., 128 Cal. Rptr. 3d 109, 111 (Ct. App. 2011).

106. *See supra* Parts I.B–I.C (discussing consumer products greenwashing cases).

107. *See* PERNICK & WILDER, *supra* note 9, at 3 ("In the 1970s, clean tech was considered 'alternative,' . . . and for good reason: it was in an early stage of development, it was too expensive, it didn't have widespread political support, and very few large, established companies were embracing the sector.").

108. *See id.*

109. *See id.* ("Even at the start of the twenty-first century, the term *clean tech* wasn't yet in the financial or business community's lexicon. If you had done a Web search on *clean technology* or *clean tech* in 2000, you'd have received only a few relevant results.") (emphasis in original).

110. *See id.*

estimate of the penetration of solar power in 1974 put the number of private homes in North America entirely heated or cooled by functional systems at just six.[111]

Neither wind energy nor solar power, the two significant new renewable energy industries, gained any traction, let alone achieved sustained growth or viability. Each saw a flurry of activity in the 1970s followed by a steep drop off in the 1980s and 1990s.[112] While the oil crises of the 1970s prompted some government support for solar photovoltaic technology and spurred development of the industry,[113] the market did not grow significantly.[114] In the 1980s, falling oil prices and Reagan-era policies hurt the industry and stunted its growth.[115]

The U.S. wind industry followed a similar trajectory. The federal government collaborated with industry to develop utility-scale wind turbine technology for a number of years spanning the 1970s and 1980s.[116] With the exception of California,[117] however, declining oil prices in the 1980s and early 1990s coupled with the loss of certain tax incentives hampered industry growth in the United States.[118] This was

111. *See The Solar Energy Book . . . Once More*, MOTHER EARTH NEWS, Jan. 1975, at 16–17 (on file with the Journal).

112. *See* Arthur Allen, *Prodigal Sun*, MOTHER JONES, http://www.motherjones.com/politics/2000/03/prodigal-sun (last visited May 17, 2013) ("Politically speaking, Sun Day – May 3, 1978 – was the peak of support for solar energy in the United States . . . . The budget for the solar institute – which President Jimmy Carter had created to spearhead solar innovation – was slashed from $124 million in 1980 to $59 million in 1982 . . . .").

113. *See, e.g.*, MICHAEL D. PLATZER, CONG. RESEARCH SERV., U.S. SOLAR PHOTOVOLTAIC MANUFACTURING: INDUSTRY TRENDS, GLOBAL COMPETITION, FEDERAL SUPPORT 4–5 (2012), *available at* http://www.fas.org/sgp/crs/misc/R42509.pdf ("The oil crises of the 1970s hastened the development of modern solar panels by a second generation of PV firms, which focused on ground applications . . . . The first direct federal support for solar manufacturing was during the Carter Administration.").

114. *See id.* at 5.

115. *See id.* ("President Reagan's Tax Reform Act of 1986 reduced the Investment Tax Credit (ITC) to 10% in 1988, where it remained until 2005. Because of these policy changes, combined with the sustained drop in petroleum prices, solar manufacturing slumped until 2005 . . . ."); *see also* Allen, *supra* note 112 (detailing the effects of Reagan-era policies on the solar industry).

116. *See About Wind Energy—History*, WIND ENERGY FOUND., http://www.windenergyfoundation.org/about-wind-energy/history (last visited Apr. 20, 2013) ("Large-scale research wind turbines were developed . . . to create a utility-scale wind turbine industry in the United States. With funding from the National Science Foundation and later the U.S. Department of Energy, 13 experimental turbines were put into operation using four major wind turbine designs.").

117. *See id.* ("But in the 1980s wind energy flourished in California partly because of federal and state tax incentives that encouraged renewable energy sources. These incentives funded the first major use of wind power for utility electricity."); *see also Wind of Change*, THE ECONOMIST (Dec. 4, 2008) http://www.economist.com/node/12673331/print ("The first wind farms sprouted in California in the early 1980s, beneficiaries of generous tax credits.").

118. *See About Wind Energy—History*, *supra* note 116.

about to change dramatically. As described in Part II, the turn of the century brought the rapid rise of the clean tech industry that we know today.

II. THE CLEAN TECH REVOLUTION: INVESTMENT, INNOVATION, AND COMMERCIALIZATION

This Part chronicles the advent of the clean tech revolution—the first period of sustained growth in research, development, and commercialization of green technologies. It discusses the surge in research and development and patent filings in green technologies, the increasing investment activity in the clean tech industry, and the remarkable growth of the solar, wind, and biofuels sectors in the first decade of the twenty-first century. This Part observes that the clean tech industry that has emerged is a complex commercial ecosystem comprised of a number of players at different points in the stream of commerce engaged in high stakes B-to-B negotiations and transactions involving capital-intensive products and projects.

A. The Start of a Revolution and the Birth of an Industry

Despite the false starts of wind and solar in the 1970s and 1980s, the clean tech industry today is strong, sustainable, and very diverse. To the extent that it has been driven by concerns about climate change, clean tech can trace its psychological roots back to 1965 when an early climatologist published data demonstrating a striking correlation between the global temperature rise and the climbing level of greenhouse gas emissions.[119] Generated by Hubert Lamb, a pioneer of climatology, and subsequently depicted in graphical form, the "hockey stick" was ultimately made famous by Al Gore in *An Inconvenient Truth* and helped to cement concern about climate change in the public consciousness.[120]

119. *See generally* Hubert Lamb, *The Early Medieval Warm Epoch and its Sequel*, 1 PALAEOGEOGRAPHY, PALAEOCLIMATOLOGY, PALAEOECOLOGY 13 (1965), *available at* http://www.sciencedirect.com/science/article/pii/0031018265900040; *see also Climate legacy of 'hockey stick'*, BBC NEWS (Aug. 16, 2004), http://news.bbc.co.uk/2/hi/science/nature/3569604.stm. The hockey stick, "was a term coined for a chart of temperature variation over the last 1,000 years . . . ." The "high-profile publication" of this chart led to use of the term "as a key piece of supporting evidence in the third assessment report by the United Nations' Intergovernmental Panel on Climate Change (IPCC) in 2001 . . . ."). *Id.*

120. *See* A. O. Scott, *Warning of Calamities with a Scholarly Tone*, N.Y. TIMES, May 24, 2006, at E1, *available at* http://www.nytimes.com/2006/05/24/movies/24trut.html ("I can't think of another movie in which the display of a graph elicited gasps of horror, but when the red lines showing the increasing rates of carbon-dioxide emissions and the corresponding rise in temperatures

For a technological turning point in the fight against climate change, however, one could point to a lesser-known hockey stick.

A clean energy patent study published by the United Nations Environment Programme, the European Patent Office, and the International Centre for Trade and Sustainable Development contains a graph plotting the rate of new green technology patent application filings from 1978 to 2006.[121] Tellingly, the graph reveals a spike in worldwide patent application filings around 1997, with substantial growth in the following years.[122] The rate of increase in global patent filings was large and steady through 2005, at about 20% a year.[123] This spike coincides with the 1997 adoption of the Kyoto Protocol to the United Nations Framework Convention on Climate Change ("UNFCCC"),[124] which set binding obligations on industrialized country signatories to reduce greenhouse gas emissions.[125] Because patenting activity is a common proxy for innovation rates,[126] we can infer that 1997 was an important turning point in green technology innovation, arguably setting the table for the clean tech revolution we know today.

The Kyoto Protocol further points to one of the critical factors that gave rise to the current clean tech industry: concern about climate change and mobilization of the international community to address the problem. The diplomatic efforts on climate change occurred in the broader context of pressing environmental issues that the world could no

come on screen, the effect is jolting and chilling."); *see also* Jenna Coriddi, *An Inconvenient Truth*, POL'Y & PRAC.: A DEV. EDUC. REV., Education for Sustainable Development, Spring 2008, at 104, 106, *available at* http://www.developmenteducationreview.com/issue6-reviews2 ("*An Inconvenient Truth* has played a significant role in raising public awareness of climate change to a new level and has been a significant educational tool in upper post-primary schools and at third level.").

121. *See* UNITED NATIONS ENV'T PROGRAMME ET. AL., PATENTS AND CLEAN ENERGY: BRIDGING THE GAP BETWEEN EVIDENCE AND POLICY FINAL REPORT 28–29 (2010), *available at* http://www.epo.org/news-issues/issues/clean-energy/patents-clean-energy/study-1.html.

122. *See id.*

123. *See id.* at 9.

124. *See id.* ("[A]dequate frameworks are important for stimulating the development of CETs.").

125. *See Kyoto Protocol*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/kyoto_protocol/items/2830.php (last visited Apr. 30, 2013) ("The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change, which ***commits*** its Parties by setting internationally binding emission reduction targets.") (emphasis in original).

126. *See, e.g.*, *Clean Energy Patent Growth Index (CEPGI) 2011 Year in Review*, CLEAN ENERGY PATENT GROWTH INDEX (Apr. 5, 2012), http://cepgi.typepad.com/heslin_rothenberg_farley_/2012/04/clean-energy-patent-growth-index-2011-year-in-review.html ("The granting of patents by the United States Patent and Trademark Office (PTO) is often cited as a measure of the inventive activity and evidence of the effectiveness of research & development investments.").

longer ignore by the 1990s.[127] Climate change was significant, and water shortages, deforestation, and air pollution were also important.[128] These environmental concerns, in turn, were part of a confluence of trends—such as electricity shortages,[129] technological advances,[130] and global shifts in corporate culture and consumer demand[131]—that together formed the fertile ground for the seeds of the modern clean tech industry.[132]

Fortunately, shrewd executives at industrial and energy incumbents, along with forward-thinking entrepreneurs, saw the new business opportunities and jumped in. What followed was major investment in research and development and substantial growth in various clean tech markets. Venture capital ("VC") investment in the clean tech industry in the United States grew from $458 million in 2001 to almost $6.6 billion in 2011.[133] The latter sum represented 23.1% of the total VC investment in 2011, the largest ever percentage of VC activity in clean tech.[134] Significantly, the ten-year growth from 1.2% up to almost a quarter of total VC activity made clean tech the fastest growing venture category in the U.S. during the decade.[135] Globally, new investment in sustainable energy totaled $162 billion in 2009.[136]

127. *See* JOEL MAKOWER & RON PERNICK, CLEAN TECH: PROFITS AND POTENTIAL 3 (2001) ("The concern over climate change in particular has led to new focus in alternative transportation and energy technologies.").

128. *Id.*

129. *Id.* ("Energy uncertainty, exemplified by electricity shortages in California, has increased demand for 'distributed generation,' technologies such as microturbines, wind turbines, and solar photovoltaics, which enable electricity to be generated at or near where it is needed, rather than being shipped hundreds of miles over power lines.").

130. *Id.* ("Technological advances, including continued innovations in microelectronics, biology, chemistry, and physics, have significantly improved the performance of many clean technologies.").

131. *Id.* ("The sustainable development imperative, which aims to balance environmental, economic, and social interests as a means of addressing the needs of the world's citizens, has increased the demand for clean, affordable, and resource-efficient technologies in the newly open markets of China, India, Latin America, Africa, and Eastern Europe.").

132. *Id.*

133. *See* RON PERNICK ET AL., CLEAN ENERGY TRENDS 2012, at 5 (2012), *available at* http://www.cleanedge.com/reports/reports-profits.php (follow 'download' link for Clean Energy Trends 2012) (providing a chart showing the sum total of investment for 2001 at $458 million and investment for 2011 at $6576 million).

134. *Id.* at 6 ("Last year's $6.6 billion, while slightly below 2008's record-breaking $6.9 billion total, represented clean tech's largest percentage of VC activity in the U.S. ever recorded, clocking in at 23.1 percent.").

135. *Id.*

136. *See* UNITED NATIONS ENV'T PROGRAMME, GLOBAL TRENDS IN SUSTAINABLE ENERGY INVESTMENT 10 (2010), *available at* http://sefi.unep.org/fileadmin/media/sefi/docs/publications/UNEP_GTR_2010.pdf.

Clean tech innovation and market growth followed the remarkable investment activity. The number of U.S. patents directed to green technologies grew moderately but steadily starting in 2002 and began to spike around 2008.[137] By the end of the decade, annual figures for green technology patents almost consistently set new highs, with 1881 patents granted in 2010[138] and 2331 granted in 2011.[139] Moreover, 2010 and 2011 saw the first and second highest annual growth rates, respectively, of granted green technology patents, with an approximately 70% year over year increase in 2010 and a 24% jump in 2011.[140] Wind power went from a $4 billion industry in 2000 to a $71.5 billion one in 2011.[141] The solar photovoltaics market saw exponential growth from $2.5 billion in 2000 to $91.6 billion in 2011.[142] The biofuels market also expanded during this period, from $15.7 billion in 2005 to $83 billion in 2011.[143]

B. The Large and Complex Web of Commercialized Clean Tech

Now that we are in the midst of the first sustained clean tech boom, there is greatly increased commerce in green technologies, often involving larger scale goods, particularly clean tech industrial and power generation products such as wind turbines, solar panels, biofuels, and

137. *See Clean Energy Patent Growth Index (CEPGI) 2010 Year in Review*, CLEAN ENERGY PATENT GROWTH INDEX (Mar. 24 2011), http://cepgi.typepad.com/heslin_rothenberg_farley_/2011/03/clean-energy-patent-growth-index-2010-year-in-review.html ("This compares to a 31 percent increase generally for all patents from 2009 to 2010 – which was the best showing ever for patents generally.").

138. *See id.*

139. *See Clean Energy Patent Growth Index (CEPGI) 2011 Year in Review*, *supra* note 126 ("U.S. patents for clean energy technologies in 2011 were at an all time high of 2331, jumping 450 patents, or 24 percent, over 2010, which is the second largest year-to-year jump, lagging only the previous year-to-year jump of 756 patents.").

140. *See Clean Energy Patent Growth Index (CEPGI) 2010 Year in Review*, *supra* note 137 ("U.S. patents for clean-energy technologies in 2010 were at an all time high, up a remarkable 756 patents (almost 170 percent) over 2009 with a value of 1881. This is the largest year to year jump since we began tracking clean energy patents by over three times the previous year to year difference.").

141. *See* MAKOWER & PERNICK, *supra* note 126, at 1; *see* PERNICK ET AL., *supra* note 132, at 3 ("Wind power (new installation capital costs) is projected to expand from $71.5 billion in 2011, up from $60.5 billion the prior year, to $116.3 billion in 2021.").

142. *See* MAKOWER & PERNICK, *supra* note 127, at 1; PERNICK ET AL., *supra* note 133, at 4.

143. *See* JOEL MAKOWER ET AL., CLEAN ENERGY TRENDS 2006, at 3 (2006), *available at* http://www.cleanedge.com/reports/reports-profits.php (follow 'download' link for Clean Energy Trends 2006) ("According to Clean Edge research, biofuels (global manufacturing and wholesale pricing of ethanol and biodiesel) will grow from $15.7 billion in 2005 to $52.5 billion by 2015."); PERNICK ET AL., *supra* note 133, at 3 ("Biofuels (global production and wholesale pricing of ethanol and biodiesel) reached $83 billion in 2011 . . . .").

cogeneration (combined heat and power) equipment.[144] The steep and steady growth in these clean tech market sectors means that many green technologies are now being bought, sold, installed, and operated in large volumes.[145] In addition to the industrial goods on the market, there are numerous related clean tech industry services such as technical consulting, compliance, and research.[146]

In 2011, global wind power installations reached their largest ever total at 41.6 gigawatts ("GW"), with the top five wind markets spread across the globe in China (eighteen GW), Europe (ten GW), the United States (seven GW), India (three GW), and Canada (1.3 GW).[147] The 2012 numbers were even higher, with 44.7 GW of new wind power installations, with both China and the United States adding more than thirteen GW and Europe adding 12.4 GW.[148] That marked an annual record for new U.S. wind installations.[149] Solar photovoltaics have significant installed capacity as well, totaling over twenty-six GW worldwide in 2011.[150] 27.9 billion gallons of ethanol and biodiesel were also produced that year.[151]

144. *See* MAKOWER & PERNICK, *supra* note 127, at 1 (Clean Energy's High Voltage Growth 2000–2010 chart showing wind power market valued at $4 billion in the year 2000); PERNICK ET AL., *supra* note 133, at 3 (stating the new wind power installation capital costs reached $71.5 billion in 2011, up from $60.5 billion the prior year); MAKOWER & PERNICK, *supra* note 127, at 1 (Clean Energy's High Voltage Growth 2000–2010 chart showing solar photovoltaics market valued at $2.5 billion in the year 2000); PERNICK ET AL., *supra* note 133, at 4 (stating that the solar photovoltaics market (including modules, system components, and installation) hit a record $91.6 billion in 2011).

145. *See* MAKOWER & PERNICK, *supra* note 127, at 1; *see also* PERNICK ET AL., *supra* note 133, at 3-4.

146. *See, e.g.*, *European Wind Energy Association Members Directory*, EUR. WIND ENERGY ASS'N, http://www.ewea.org/membership/members-directory/ (last visited Apr. 2, 2013) (listing 285 consultancies including computer software and communications; electrical; environmental impact assessment; health and safety; market and business analysis; wind forecast and resource assessment; and others).

147. *See* PERNICK ET AL., *supra* note 133, at 3.

148. *See* RON PERNICK ET AL., CLEAN ENERGY TRENDS 2013, at 3 (2013), *available at* http://www.cleanedge.com/reports/reports-profits.php (follow 'download' link for Clean Energy Trends 2013).

149. *See* Jeffrey Ryser, *US Wind Installations Could Top 12,000 MW in 2012: EIA*, PLATTS (Dec. 19, 2012, 5:22 PM), http://www.platts.com/RSSFeedDetailedNews/RSSFeed/ElectricPower/6932947 ("A level of 12,000 MW of new installations would be an annual record, and would push total installed wind power generation capacity above 58,000 MW.").

150. PERNICK ET AL., *supra* note 133, at 4 ("While total [solar photovoltaics] market revenues were up 29 percent, installations climbed more than 69 percent from 15.6 GW in 2010 to more than 26 GW worldwide last year.").

151. *Id.* at 3.

To move these green technologies from factory to field often requires complex transactions and multiple skilled players along the way.[152] Green technologies, particularly those that generate renewable energy, need major manufacturers to build them, skilled installers and operators to deploy and operate them, well-funded project developers to finance the facilities that use them (such as wind farms and solar plants), and utilities to purchase and distribute the energy generated by them.[153] Therefore, in clean tech today, much of the commerce is business-to-business as clean tech companies and green brand owners market and sell power generation and energy efficiency equipment to other companies such as installers, developers, and utilities.[154]

The wind industry, for example, includes wind turbine manufacturers that design and manufacture turbines, wind farm developers that develop and sometimes own and operate wind farms, construction companies that build wind farms, finance companies that provide loans to wind farm developers and manufacturers, managing owners responsible for operation, maintenance and administration of wind farms, and various consultancies and research organizations that provide technical due diligence, wind resource assessments, and forecasting to the other industry players.[155] On the whole, clean tech comprises a complex commercial ecosystem, with commercial "consumers" situated at various points along the development, supply, and operations chain.[156]

Moreover, the large investments required for research and development of clean tech products and projects mean that each player in the chain has substantial capital at stake.[157] Commercialization costs for successful renewable energy facilities, particularly for large-scale projects, are extremely high due to the complex equipment and

152. *See Community Wind Toolbox: Chapter 2: Development Overview and Checklist*, WINDUSTRY, http://www.windustry.org/community-wind/toolbox/chapter-2-development-overview-and-checklist (last visited Apr. 23, 2013) (discussing the roles of wind manufacturers, developers, consultants, contractors, utilities and noting that "[c]ommunity wind project development requires many steps and involves many diverse people and organizations . . . Much of the necessary work will require hiring experienced consultants and lawyers, such as for site assessment, interconnection studies, and developing easements.").

153. *See id.*

154. *See infra* Part III.B (discussing cases involving B-to-B clean tech marketing and sales).

155. *See Community Wind Toolbox: Chapter 2: Development Overview and Checklist*, *supra* note 152.

156. *See id.*

157. *See, e.g.*, Joel Makower, *Financing Our Cleantech Future*, GREENBIZ.COM (Jan. 28, 2010), http://www.greenbiz.com/blog/2010/01/18/financing-our-cleantech-future (providing the case study of BrightSource Energy).

infrastructure required.[158] A wind farm typically costs hundreds of millions of dollars, and a utility-scale solar thermal plant can cost $2–3 billion.[159] In one recent high profile deal, MidAmerican Renewables paid between $2.0 and $2.5 billion for a 579 megawatt ("MW") solar project set to begin construction in 2013.[160] With a number of sectors of the clean tech industry now reaching maturity, clean tech firms are becoming the key players in the new area of commercial consumer greenwashing.

III. THE NEW GREENWASHING PARADIGM

This Part proposes a new greenwashing paradigm. It explains how like the B-to-C advertisers of consumer products before them, green commercial players utilize environmental marketing and make representations about environmental benefits of their green technology goods and services to their business consumers.[161] It is this form of B-to-B environmental marketing that drives the new cases.[162] This Part surveys three new categories of commercial consumer greenwashing cases: breach of contract or breach of warranty suits involving energy generation equipment and projects,[163] trademark infringement actions regarding branded green technology equipment,[164] and fraud cases in connection with renewable energy credits.[165]

A. Introducing the New Paradigm

In light of the high stakes of clean tech commercialization, the players involved are using everything in their arsenals to achieve their strategic business goals. One of the available tools is marketing. It is becoming clear that some clean tech commercial players are increasingly tempted to make false, misleading, deceptive, or inflated claims about the environmental benefits of their products and projects.[166] Moreover, the B-to-B marketing of green commercial products and services in the clean

158. *See id.*
159. *Id.*
160. *See* Eric Wesoff, *SunPower's 579 MW Solar Project Sold to MidAmerican*, GREENTECH MEDIA (Jan. 2, 2013), http://www.greentechmedia.com/articles/read/SunPowers-579-MW-Solar-Project-Sold-to-MidAmerican.
161. *See infra* Part III.B.
162. *See infra* Parts III.A–B.
163. *See infra* Part III.B.
164. *See infra* Part III.C.
165. *See infra* Part III.D.
166. *See infra* Parts III.B–D.

tech industry renders each commercial "consumer" in the supply chain vulnerable to greenwashing.[167] To make matters worse, large clean tech deals such as solar projects can involve multiple transaction documents so that not every player is a party to each transaction, which makes these project deals ripe for disputes.[168] This is the context that has given rise to the new paradigm: Greenwashing 2.0.

The new greenwashing paradigm looks beyond those environmental marketing claims about consumer products directed at individuals, which formed the basis of nearly all greenwashing cases in the 1970s, 80s, and 90s,[169] to encompass representations made in connection with the sale of industrial green technology equipment and services to commercial consumers.[170] The definition of the term "greenwashing" need not change to accommodate the new paradigm. In fact, as discussed below, the claims and activities at issue in the new paradigm cases tend to fall squarely within the conventional definition of the term—false or misleading claims about the purported environmental benefits of a product, service, or business practice.[171]

By expanding the context in which we recognize environmental marketing claims as potential greenwashing, the new paradigm enables a more complete understanding of the scope and impact of the greenwashing problem by taking into account the new commercial reality of the clean tech revolution. When we acknowledge B-to-B commerce among clean tech companies and green brand owners involving renewable energy generation and energy efficiency equipment, many new and significant greenwashing cases come to light.[172] Thus, as part of the new paradigm, greenwashing cases are brought by or on behalf of green commercial consumers and involve, for example, allegations of false wind farm resource estimates, faulty cogeneration power units, counterfeit solar panels, and trademark infringement in connection with LED lighting, environmental compliance software, and wind and solar manufacturing.[173]

167. *See id.*

168. *See* Roger C. Haerr, *Who Pays When Solar Modules Fail?*, MARTINDALE.COM (Dec. 9, 2010), http://www.martindale.com/energy-law/article_Luce-Forward-Hamilton-Scripps-LLP_1201576.htm ("When a component fails, parties often turn to the transaction documents to see who is responsible. Of course, not every party in a transaction is itself a party to each such document, so different players will look in different places.").

169. *See supra* Parts I.B–C.

170. *See infra* Parts III.B–D.

171. *See id.*

172. *See id.*

173. *See id.*

B. Breach of Contract and Breach of Warranty Cases

Under the new paradigm, greenwashing cases include breach of contract claims in which a manufacturer or another commercial player in the clean tech industry misrepresents the resources or capacity of a project site or inflates the efficiency or production capability of power generation equipment.[174] Such cases are brought by the green commercial consumers that purchase faulty equipment or otherwise enter into business deals with the company that made the allegedly deceptive statements.[175] In these instances, the alleged misrepresentations fit squarely within the traditional definition of greenwashing, and the potential damage to the commercial "consumer" and the environment is significant.[176] This risk arises because the statements at issue relate to wind farm projects, and products such as wind turbines and cogeneration units, whose sole purpose is to harness renewable energy or efficiently generate power.[177]

1. *DeWind v. Glenmore Wind Farm*

Given the size of the wind industry today, the multiple players in the supply chain, and the high costs involved, it may not be a surprise to see greenwashing in connection with wind farms. One example of B-to-B greenwashing in the wind industry involves DeWind Company ("DeWind"), a vertically integrated global wind company based in Germany and southern California.[178] Owned by Daewoo, DeWind includes DeWind Energy Development LLC, which is in the business of wind farm project development.[179] While developing one project, DeWind ran into the new form of greenwashing.[180]

174. *See, e.g.*, Complaint, DeWind Co. v. Glenmore Wind Farm, LLC, No. SACV12-00392 JVS (RNBx) (C.D. Cal. Oct. 31, 2012), 2012 WL 1577459 (dismissed with prejudice) (involving allegations that defendants misrepresented a wind project's wind resource estimate).

175. *See, e.g.*, Complaint, Kumeyaay Wind LLC v. Gamesa Wind US LLC, No. 3:11-cv-02425-JM-BGS (S.D. Cal. Oct. 18, 2011) (involving allegations that defendant's misrepresented the minimum availability of wind turbines).

176. *See infra* Parts III.B.1–B.2, III.C.1–C.2 (discussing the rationale for classifying particular new paradigm cases as greenwashing).

177. *See infra* Parts III.B.2–B.3.

178. *See About DeWind*, DEWIND CO., http://www.dewindco.com/eng/dewind/about.asp (last visited Apr. 30, 2013).

179. *See Affiliates*, DEWIND CO., http://www.dewindco.com/eng/business/affiliates.asp (last visited Apr. 30, 2013).

180. *See* Complaint, *supra* note 175, ¶ 15 ("Pursuant to the terms of the Agreement, Plaintiff paid $250,000 (the 'Fee') to Defendants in consideration for the exclusive right to purchase or sell Defendants' interests in its 14 megawatt wind farm project (the 'Project') during the term of the

In 2009, DeWind entered into an agreement with Glenmore Wind Farm, turbine maker Urban Power, and project developer Prelude, through which it agreed to pay $250,000 for the exclusive right to purchase or sell the other parties' interests in a fourteen MW wind farm project.[181] DeWind did not find any buyers for the project and sued Glenmore, Urban, and Prelude for breach of contract.[182] According to the complaint, DeWind's inability to close a sale of the project was due to misrepresentations the defendants made about the project's wind resource estimate and the defendants' failure to complete additional development work required by the agreement.[183]

Specifically, DeWind alleged that prior to the agreement defendants stated that the net capacity factor[184] of the project site was 31.8% while the wind resource estimate[185] report defendants provided after execution of the agreement put the number at 25.8%.[186] This difference in net capacity factor made the project uneconomical, DeWind alleged, and proved to be a "decisive cause" of DeWind's inability to sell the project.[187]

This would not typically be viewed as a greenwashing case because DeWind is not an individual consumer and a wind farm project is not a consumer product. Rather, with a green commercial consumer in DeWind accusing other commercial players of making false or misleading representations in connection with the sale of a clean tech

Agreement."); *id.* ¶ 18 ("Defendants misrepresented the Project's wind resource estimate by representing that the project site contained a higher forecasted capacity factor than it actually did.").

181. *Id.* ¶¶ 13–15.

182. *Id.* ¶ 16 ("Under the Agreement, Plaintiff was required to find buyers for the Project or buy the Project itself, and close a sale of the Project (a 'Transaction') within 120 days of the Effective Date (the 'Term'). The Term expired on March 26, 2010.").

183. *Id.* ¶ 19 ("Defendants' misrepresentations regarding the wind resources of the project violated Section 2(d) of the Agreement.").

184. The capacity factor of a project site is the ratio of energy actually produced to the maximum possible energy production. *See, e.g.*, Charles Vaughan, *Clipper Windpower: The Economics of Wind Energy*, INDUS. WIND ACTION GROUP, http://www.windaction.org/documents/3965 (last visited Feb. 26, 2013) ("*[T]*here are substantial deductions which need to be included in order to accurately estimate a windplant's capacity factor, with the Net Capacity Factor of a windplant being on average about 86% of the Gross Capacity Factor.").

185. A wind resource estimate or assessment provides information about the wind energy potential of a geographic site or area. *See, e.g.*, *Wind Program Resource Assessment & Characterization*, DEP'T OF ENERGY, http://www1.eere.energy.gov/wind/resource_assessment_characterization.html (last updated May 30, 2012) ("A technical wind resource assessment completed by the Wind Program in 2009 estimated that the land-based wind energy potential for the contiguous United States is 10,500 GW capacity at 80-m and 12,000 GW capacity at 100 m heights, assuming a capacity factor of at least 30%.").

186. Complaint, *supra* note 174, ¶ 18.

187. *Id.* ¶¶ 18–19.

project, it can be viewed as greenwashing only under the new paradigm proposed here. The representations at issue, if false or deceptive, would comport with the common definition of greenwashing because they are statements about the environmental benefits of a product or service, specifically false wind resource estimates.[188] More particularly, an inflated net capacity factor for a wind farm project site misrepresents the clean energy production capability of installed wind turbines at the site.[189] Thus, such false numbers go directly to the green benefits of a project developed for the sole purpose of generating renewable energy.

More importantly, this type of greenwashing in connection with major renewable energy facilities could have a significant adverse impact on efforts to curb climate change.[190] As the facts of the DeWind case suggest, false claims about the capacity of a project site can kill a wind farm project by preventing its sale to an operator that would keep the wind farm online generating renewable energy. Indeed, the Glenmore wind farm was decommissioned in 2012, though it is not certain that the alleged greenwashing was the decisive factor in its demise.[191] Alternatively, such misrepresentations could lead to misinformed investment in a particular project, which might otherwise have been directed to a more viable renewable energy generation facility. If true, not only would the allegations of inflating net capacity factor for a wind farm be greenwashing, but DeWind's anti-greenwashing legal action would be at least equally, if not more, important than many of the cases involving false or misleading claims brought by or on behalf of individual consumers.[192]

2. *Kumeyaay v. Gamesa*

Similarly, in *Kumeyaay Wind v. Gamesa*,[193] Kumeyaay, the owner and operator of the Kumeyaay wind farm in southern California, sued Gamesa, over the wind turbine manufacturer's false assertions regarding

188. *See supra* notes 184–85.

189. *See* Vaughan, *supra* note 184.

190. *See Glenmore Wind Energy Facility*, WIS. PUB. SERVICE, http://www.glenmorewind.com/ (last visited March 23, 2013) (noting that the Glenmore Wind Project will be decommissioned in September 2012). Other renewable energy projects subject to greenwashing could be similarly taken off line or divert resources from more viable projects, resulting in losses of clean energy production on a gigawatt or megawatt scale.

191. *Id.*

192. *See supra* note 190.

193. *See* Complaint, *supra* note 175, ¶ 1.

the performance of its turbines.[194] In 2005, Kumeyaay entered into agreements with Gamesa by which the Spanish wind turbine maker would supply twenty-five 2.0 MW turbines for use at the wind farm and would operate and maintain the turbines.[195] According to the complaint, Gamesa represented that each turbine would have a minimum availability of 95%, and the wind farm as a whole would have a minimum availability of 97%.[196]

In 2011, Kumeyaay sued Gamesa for breach of the availability warranty and other warranties.[197] According to the complaint, the wind farm's availability fell below the minimum warranted thresholds, and Gamesa therefore owes Kumeyaay liquidated damages for significant periods of time when the turbines were not functioning after strong winds experienced during a winter storm.[198] Kumeyaay also alleged that a number of the turbines experienced blade failures, and although Gamesa replaced the blades, it improperly demanded that Kumeyaay pay the replacement costs.[199]

As in the DeWind case, this lawsuit pits a green commercial consumer (wind farm owner Kumeyaay) against another industry player in the context of an allegedly underperforming wind farm. In this instance, the environmental marketing claims at issue relate to wind turbine performance,[200] as well as quality problems with the turbine blades.[201] The warranties involved may have oversold the green capabilities of the turbines by hiding deficiencies that undermined the products' minimum

194. *Id.* ¶ 10 ("Kumeyaay owns a wind-powered electric generating facility located approximately 70 miles east of San Diego, in Boulevard, California, known as the Kumeyaay Wind Farm (the 'Wind Farm').").

195. *Id.* ¶¶ 11–14.

196. *Id.* ¶ 24.

197. *Id.* ¶¶ 109–35.

198. *Id.* ¶¶ 43, 55 ("Gamesa owes Kumeyaay liquidated damages in the amount of $3,535,209 due to significant periods of downtime (i.e., periods where the Turbines were not functioning) related to the Event during which the Wind Farm's availability fell below the minimum thresholds set forth in the TSA's Availability Warranty.").

199. *Id.* ¶¶ 51–53 ("Gamesa has refused to recognize that it is solely responsible for these replacement costs as well as liquidated damages payable to Kumeyaay under the TSA for lost energy production. In fact, Gamesa now contends that Kumeyyay owes it $31,861,863.25 for replacing the blades with LM blades.").

200. *See id.* ¶ 55.

201. *See id.* ¶¶ 35, 38 ("After commencement of operations in January 2006, the Wind Farm suffered nineteen blade failures . . . . By the summer of 2009, eleven additional failures had occurred at the Wind Farm.").

availability, and therefore, their clean energy generation capacity.[202] Moreover, the Kumeyaay wind farm was one of the first U.S. sites to use this model of Gamesa turbine, such that the manufacturer's warranties were particularly important to Kumeyaay's decision to purchase the new technology for the project.[203] If Kumeyaay's allegations are true, Gamesa's misrepresentations constitute greenwashing, namely, they inflate the performance of renewable energy generation products, and the harm in loss of power output is potentially very significant.

The broader context driving construction and operation of renewable energy facilities such as wind farms and solar power plants further illustrates the impact of the new paradigm cases like those DeWind and Kumeyaay are involved in. Often utilities or other off-takers purchasing electricity need clean power generated by wind farms and solar power plants to satisfy their obligations under state renewable portfolio standards ("RPS").[204] Here, the Kumeyaay wind farm has been helping San Diego Gas & Electric meet its renewable energy targets.[205] In instances of underproducing sites or underperforming turbines, as alleged in these cases, off-takers could fall short of their goals of providing certain amounts of power from renewables. Thus, both the off-takers' needs or desires to provide clean energy and the RPS policy goals are frustrated by new paradigm greenwashers.

3. *D.G. Cogen Partners v. Hess Microgen*

A similar dispute over false or misleading representations regarding power generation equipment centered on cogeneration units. Cogeneration technology, also known as combined heat and power ("CHP"), uses fuel (usually natural gas) to produce electricity and, unlike traditional power systems, recycles and uses the heat released in the

202. *See id.* ¶¶ 24, 55 ("Under the Availability Warranty, Gamesa warranted that each Turbine would have a minimum availability of 95% and the Wind Farm as a whole would have a minimum availability of 97% . . . .").

203. *Id.* ¶ 16.

204. *See, e.g.*, *State RPS' Lead to 250% Market Growth by 2025*, RENEWABLEENERGYWORLD.COM (July 2, 2010), http://www.renewableenergyworld.com/rea/news/article/2010/07/state-rps-lead-to-250-market-growth-by-2025 ("As of June 2010, mandatory RPS policies, requiring states to procure a percentage of generation from renewable energy, have been passed in 31 US states and the District of Columbia, with six additional states approving conditional or non-mandatory renewables goals.").

205. *See Kumeyaay Wind*, CAMPO KUMEYAAY NATION, http://www.campo-nsn.gov/windfarm.html (last visited Apr. 4, 2013) ("The Kumeyaay Wind farm annually produces power sufficient for about 30,000 homes and saves approximately 110,000 tons a year in greenhouse gas emissions, compared with equivalent fossil fuel generation.").

process.[206] In 2008, DG Cogen Partners, LLC ("Cogen"), a California-based installer and operator of energy efficient power systems, sued Hess Microgen ("Hess"), for damages Cogen allegedly suffered due to a fleet of faulty cogeneration units, including the Hess Microgen 200 Packaged Cogeneration System ("Microgen 200").[207]

In 2004, Cogen purchased a fleet of Hess CHP units, including Microgen 200 units, from a third party, becoming the assignee of the third party's purchase agreement with Hess.[208] In its complaint, Cogen alleged that, prior to and at the time of its purchase, Hess failed to disclose flaws in the CHP units and misrepresented the capabilities of the products through statements, technical documents, and advertising.[209] In particular, Cogen alleged that Hess represented that the units contained "rich burn" engines that generated high thermal output when the engines were actually "lean burn," which provide lower output and require more steps to meet regulatory compliance.[210] The complaint further alleged that the units subsequently failed completely or did not generate electricity at the rated capacity.[211]

Misrepresenting lower thermal output "lean burn" engines as high output "rich burn" models would constitute greenwashing if those products were marketed to individual consumers, and should also be considered greenwashing when, as here, the units are marketed to commercial consumers. The efficiency and thermal output of the cogeneration units are the very aspects that make them green because these features provide power in a cleaner fashion than conventional units. Here, Cogen, a company focused on environmentally friendly power

206. *See, e.g.*, *Cogeneration—Combined Heat and Power*, GEN. ELECTRIC COMPANY, http://www.ge-energy.com/solutions/cogeneration_of_heat_and_power.jsp (last visited Apr. 23, 2013).

207. *See* Complaint ¶¶ 20–21, 32, 37, 44, DG Cogen Partners v. Hess Microgen, LLC, 4:08-cv-03249-SBA (N.D. Cal. July 3, 2008) [hereinafter Cogen Complaint].

208. *Id.* ¶ 19 ("On or about July 23, 2004 . . . DG Cogen entered into a written agreement with RealEnergy, whereby DG Cogen purchased the Hess cogeneration systems and other assets, including an assignment of customer leases").

209. *Id.* ¶¶ 14, 16 ("On information and belief, Hess made numerous representations to RealEnergy to induce RealEnergy to enter into the Hess-RealEnergy Contract, including that the systems were 'rich burn' (requiring less steps than 'lean burn' to meet regulatory compliance) and have an output of at least 192 kWH on natural gas . . . . Further, on information and belief, Hess sold the cogeneration systems to RealEnergy with numerous defects . . . . Hess also provided assurances to DG Cogen that the units would operate and run at the technical specifications set forth in the Hess information and promotional materials for the units . . .").

210. *Id.* ¶ 14.

211. *Id.* ¶ 20 ("Among other things, the units failed to generate electricity at or near the rated capacity of at least 192kWH and the system controls were failing.").

production,[212] relied on Hess's assurances that the units would operate to specification and its representations about thermal output levels in its decision to take over the contract for the equipment.[213]

Moreover, the energy wasted by misleading operators like Cogen into purchasing and operating less efficient CHP units is potentially quite large and damaging to the environment. By some estimates, if the energy lost in the form of waste heat were harnessed it could provide one-fifth of the energy needs of the United States.[214] Energy efficiency technology, particularly recycling waste heat by cogeneration, is too important to be compromised by false claims and faulty equipment, and it is this environmental context that compels recognition of Cogen's lawsuit as a greenwashing case.

C. New Paradigm Eco-mark Infringement Cases

A second category of situations that constitute greenwashing under the new paradigm is trademark infringement where the marks at issue are owned by manufacturers of clean tech products such as wind turbines, solar panels, and materials for solar cell manufacturing.[215] Centering on "eco-marks"—trademarks and service marks used in connection with green goods and environmental services—these actions are brought by green brand owners on behalf of their green commercial consumers.[216] Traditionally, such instances of eco-mark infringement involving industrial clean tech equipment would not be on the radar of commentators or policymakers, let alone be considered greenwashing cases by those actually focused on the issue.[217] However, trading on an

212. *See id.* ¶ 1 ("DG Cogen is in the business of providing environmentally-friendly energy solutions, including through installing and operating cogeneration systems.").

213. *Id.* ¶¶ 17, 19 ("DG Cogen and Hess jointly visited numerous sites in California where the units had been installed, and Hess separately visited a number of California sites, so that Hess could provide assurances to customers that the units DG Cogen planned to purchase would operate to specification.").

214. *See* Lisa Margonelli, *Waste Not: A Steamy Solution to Global Warming*, ATLANTIC MONTHLY (May 1, 2008), http://www.theatlantic.com/magazine/archive/2008/05/waste-not/306757/ ("A 2005 report by the Lawrence Berkeley National Laboratory found that U.S. industry could profitably recycle enough waste energy—including steam, furnace gases, heat, and pressure—to reduce the country's fossil-fuel use (and greenhouse-gas emissions) by nearly a fifth.").

215. *See infra* Parts III.C.1–5 (discussing new paradigm trademark infringement lawsuits involving solar panels, wind turbines, chemicals for solar cell manufacturing, environmental compliance software, and LEDs).

216. *See, e.g.*, Press Release, Suntech, Suntech Granted Preliminary Injunctions Against Trademark Infringers (Feb. 6, 2009), *available at* http://ir.suntech-power.com/phoenix.zhtml?c=192654&p=irol-newsArticle&ID=1253039&highlight=.

217. *See infra* Part IV.A (discussing the greenwashing blind spot).

established clean tech company's reputation for quality green technology products is a form of greenwashing as it conveys false or misleading information about the genuineness of the infringing articles by cloaking them in the established goodwill of the eco-mark owner.[218] Moreover, to the extent the infringing products or services at issue in these cases are inferior in overall quality or energy output, the infringers' acts constitute greenwashing on a highly damaging scale.[219]

1. Suntech Fights Eco-mark Outlaws

Suntech Power Holdings ("Suntech"), a Chinese solar module manufacturer, is the world's largest producer of photovoltaic modules.[220] Suntech owns U.S. trademark registrations for its SUNTECH design mark and for the SUNTECH word mark used in connection with other solar energy products.[221] In August 2008, Suntech sued its competitor Shenzhen Xintian Solar Technology Co. and its subsidiary Sun Tech Solar (collectively "Sun Tech Solar") in federal court in San Diego, California for alleged infringement of its SUNTECH trademarks.[222]

According to the complaint, Sun Tech Solar's infringing activity included use of the confusingly similar trademarks SUN TECH and SUN TECH SOLAR in connection with the sale of solar modules similar to Suntech's products.[223] At the time, Sun Tech Solar had immediate plans to exhibit and advertise using the allegedly infringing trademarks at the Solar Power Conference & Expo—perhaps the largest international solar power conference—in San Diego on October 13–16, 2008.[224]

Suntech obtained legal relief when the Court granted Suntech's motion for a preliminary injunction,[225] ordering Sun Tech Solar to cease all use of the SUN TECH and SUN TECH SOLAR marks, as well as any other

218. *See infra* Parts III.C.1–5 (discussing the rationale for thinking about new paradigm trademark infringement lawsuits as greenwashing).

219. *Id.*

220. *About Suntech*, SUNTECH, http://www.suntech-power.com/en/about/about-suntech (last visited Apr. 2, 2013).

221. *SUNTECH, Registration No. 3,111,705; SUNTECH, Registration No. 3,662,906.*

222. *See* Complaint ¶¶ 12, 15, Suntech Power Holdings Co. v. Shenzhen Xintian Solar Tech. Co., No. 3:08-cv-01582-H-NLS (S.D. Cal. Aug. 28, 2008) [hereinafter Suntech Complaint]; *see also* SUNTECH, Registration No. 3,662,906 (maturing from U.S. Trademark Application Serial No. 77,559,361, filed August 29, 2008, one day after the complaint was filed). The first use in commerce on the application in connection with solar photovoltaic modules was listed as July 2, 2004. *Id.*

223. *See* Suntech Complaint, *supra* note 222, ¶ 15.

224. *See id.* ¶¶ 18–20.

225. Order Granting Plaintiffs' Motion for Preliminary Injunction at 1–2, Suntech Power Holdings Co. v. Shenzhen Xintian Solar Tech. Co., 3:08-cv-01582-H-NLS (S.D. Cal. Oct. 6, 2008).

confusingly similar marks, in connection with solar modules in the U.S.[226] The Court subsequently found Sun Tech Solar in civil contempt and ordered seizure of the infringing materials.[227] The lawsuit ultimately resulted in a default judgment and a permanent injunction against Sun Tech Solar.[228]

Suntech also took action against a solar module counterfeiter in Europe.[229] In February 2009, the company announced that it had been granted preliminary injunctions against the nearly identical but unrelated Suntech Power Holding (Hongkong) Co., Limited and two distributors.[230] The preliminary injunctions prohibited the Hong Kong company and its distributors from selling SUNTECH branded products.[231]

Sun Tech's actions in misrepresenting that its solar modules are the reputed genuine articles constitute greenwashing under the new paradigm. Sun Tech was free-riding on Suntech's established reputation as a major manufacturer of high quality green products. The eco-mark infringement, a calculated passing off of Sun Tech's solar modules as those of a well-known clean tech company, falsely cloaks the counterfeit articles in the established goodwill of the SUNTECH mark. As such, the infringement conveys false or misleading information about the genuineness of those solar modules. Though the damage may not be immediate and tangible, such free riding is, in effect, a false marketing message about green products, and therefore constitutes greenwashing.

In enforcing its solar product trademarks, Suntech is acting on behalf of its green commercial consumers to protect them against the tangible harm that counterfeit articles could inflict.[232] According to Suntech's press release about the injunctions in Europe, the company is "determined to proactively protect our customers' interests and the integrity of the Suntech brand."[233] Eco-mark infringement actions can therefore be considered anti-greenwashing enforcement actions with the brand owner acting to protect of its commercial consumers from the greenwashing activity of eco-mark infringers. As is typical in

226. *Id.* at 6–7.

227. *Id.*

228. Order Granting Plaintiff's Motion for Default Judgment at 5–6, Suntech Power Holdings Co. v. Shenzhen Xintian Solar Tech. Co., No. 3:08-cv-01582-H-NLS (S.D. Cal. Jan. 29, 2009).

229. Press Release, *supra* note 216.

230. *Id.*

231. *Id.*

232. *See id.*

233. *Id.*

counterfeiting situations, the biggest concern from a consumer protection standpoint is the potential quality gap between the products of the known brand and the imitations.[234] Dr. Zhengrong Shi, Suntech's Chairman and CEO, emphasized the high quality and performance of his company's products:

> Due to our stringent quality control programs, Suntech solar products offer industry leading power output guarantees and frequently exceed project performance targets. They have also been utilized in many of the world's largest and highest profile PV solar projects.[235]

The salient concerns with counterfeit solar modules are that they will produce less renewable energy than the genuine articles or will not last as long.[236] With solar modules, devices whose sole function is to harness and generate renewable energy, any such performance discrepancy would mean less of the intended green benefit. In other words, infringers holding out counterfeit solar modules of inferior quality are engaged in greenwashing by, in effect, making false or misleading representations about the environmental benefits of these knockoff renewable energy products. Thus, Suntech's eco-mark enforcement actions in Germany and the United States are important anti-greenwashing measures that should prevent such problems by precluding sales of the knockoff modules going forward.

2. Nordic Battles an Ill Wind

Another eco-mark case involved alleged free riding on a green brand owner's reputation for quality renewable energy equipment. In August of 2009, Nordic Windpower ("Nordic"), a wind turbine manufacturer based in Berkeley, California, sued Nordic Turbines, Inc. ("NTI"), a competing turbine manufacturing venture, alleging that NTI's use of the term "Nordic" to market and sell wind turbines and raise capital for the manufacture of wind turbines infringed Nordic's trademark registration.[237] Nordic also asserted trade dress protection for a blue and

234. ORG. FOR ECON. CO-OPERATION & DEV., THE ECONOMIC IMPACT OF COUNTERFEITING AND PIRACY 4 (1998), *available at* http://www.oecd.org/industry/ind/38707619.pdf ("The ultimate victims of unfair competition are the consumers. They receive poor-quality goods at an excessive price and are sometimes exposed to health and safety dangers.").

235. Press Release, *supra* note 216.

236. *See* ORG. FOR ECON. CO-OPERATION & DEV., *supra* note 234, at 4.

237. *See* Complaint, Nordic Windpower USA, Inc. v. Nordic Turbines, Inc., 3:09-cv-03672-EDL (N.D. Cal. Aug. 11, 2009).

orange color scheme the company uses in its advertisements and promotional material.[238] The complaint alleged that NTI was using an identical blue and orange color scheme.[239]

The allegations in this action paint a disturbing picture for potential purchasers of Nordic Windpower's turbines. As in the Suntech dispute, the products are the same and the eco-marks at issue are effectively identical.[240] Therefore, the likelihood of consumer confusion would likely be high, and commercial consumers such as wind farm developers and operators could end up with products materially different and inferior quality than the ones they intended to buy.[241] Specifically, as discussed above, purchasers of renewable energy equipment and the power they generate are often motivated by the obligation or desire to provide clean energy.[242] Should they receive inferior wind turbines or reduced power output, these purchasers might enjoy far less green benefit from their investment. Because the sole function of a wind turbine is to generate electricity from a clean, renewable resource, the activity at issue in this case goes directly to the environmental benefit of the allegedly infringing product. If problems arise with the quality or energy output of the allegedly infringing turbines sold by Nordic, this should be considered a greenwashing case under the new paradigm.

3. *Voltaix v. NanoVoltaix*

In another eco-mark infringement case brought on behalf of green commercial consumers, Voltaix, LLC ("Voltaix") sued NanoVoltaix, Inc. ("NanoVoltaix") for infringement of two U.S. trademark registrations for the marks VOLTAIX and VOLTAIX, INC.[243] Both registrations are for "chemicals used in the manufacture of semiconductors and photovoltaic devices."[244] Voltaix is a New Jersey company that manufactures chemicals for the semiconductor and solar

238. *See id.* ¶¶ 58–59.

239. *Id.* ¶ 63.

240. *See id.* ¶¶ 41–48 (stating a claim for infringement of the NORDIC WINDPOWER mark by defendant's use of "NORDIC" in its name); *see also supra* Part III.C.1 (noting that Sun Tech Solar's infringing activity included use of the confusingly similar trademarks SUN TECH and SUN TECH SOLAR in connection with the sale of solar modules similar to Suntech's products).

241. *See id.* ¶¶ 70–71, 73 (stating that the sight, sound, and meaning of NORDIC, as compared to NORDIC WINDPOWER, would deceive the public and cause consumer confusion).

242. *See supra* note 205 and accompanying text.

243. *See generally* Complaint, Voltaix, LLC v. NanoVoltaix, Inc., No. 3:09-cv-00142-AET-JJH (D.N.J. Jan. 12, 2009).

244. *See* VOLTAIX, INC., Registration No. 2,954,404; VOLTAIX, Registration No. 2,992,964.

energy industries.[245] As such, the green commercial consumers implicated by the alleged infringement are solar cell manufacturers that source their chemicals from Voltaix. In the event that NanoVoltaix's marketing misleads these manufacturers, they may purchase upstream solar products that they do not want and that do not work for their solar business. In such situations, the solar cells produced using inappropriate or inferior chemicals could be inoperable or of lower quality, frustrating the efforts of downstream clean tech players to generate the desired amounts of solar energy. The alleged trading off of Voltaix's name and brand, therefore, could be damaging to the company and its customers and to the fight against climate change.[246]

4. Enviance's Environmental Software Eco-mark

From clean tech hardware we turn to environmental software, an emerging field that has been the subject of new paradigm eco-mark infringement suits. Enviance produces and sells Environmental Enterprise Resource Planning ("ERP") software and provides other environmental services.[247] The ERP software enables Enviance's clients to measure, manage, and report greenhouse gas ("GHG") emissions as well as other environmental health and safety data in order to mitigate their environmental impact.[248]

In June 2009, Enviance brought a trademark infringement action against Enviance Services ("ES") to enforce three U.S. trademark and service mark registrations for computer software for environmental regulation and compliance, as well as consulting in the area of environmental compliance.[249] Enviance alleged that ES was using the term "Enviance" in its promotions, and that the use of the mark, in relation to ES, is designed to mislead consumers into believing the origin of goods and services is Enviance.[250] The alleged free riding of ES on Enviance's established green brand constitutes false environmental marketing about the quality of the software. In addition, a customer fooled by this trademark infringement into purchasing and relying upon ineffective environmental compliance software might end up with non-

245. Complaint, *supra* note 243, ¶¶ 11–12.

246. It is likely too early to tell whether eco-mark infringement has any attributable affects on the fight to curb climate change.

247. *See* Complaint ¶ 10, Enviance, Inc. v. Enviance Servs. LLC, No. 3:12-cv-01374-CAB-BLM (S.D. Cal. June 7, 2012).

248. *Id.*

249. *See id.* ¶¶ 13–14.

250. *See id.* ¶¶ 18–23.

compliant business operations. That could mean higher GHG emissions and more damage to the environment. With GHG emissions accounting and reduction being environmentally and legally important, the possibility of potentially inadequate infringing software and services displacing quality offerings could become a major greenwashing problem that could compromise complex schemes for managing greenhouse gas emissions.

5. Lighting Science Group: Bridging Both Paradigms

Viewing allegations of eco-mark infringement as potential greenwashing reveals many previously overlooked cases, including those where a clean tech product is marketed both to individual and commercial green consumers. Such cases may be considered hybrids—a combination of traditional and new paradigm greenwashing—because the eco-mark infringement affects both types of consumers. One example of a green product marketed directly to individual consumers as well as commercial consumers is LED lighting.

Lighting Science Group ("LSG") is a Florida-based designer and manufacturer of LED lighting products, including retrofit lamps, luminaires, and lighting solutions for architectural and design projects.[251] In June 2012, LSG asserted three U.S. trademark and service mark registrations for the mark LIGHTING SCIENCE against Electronic Lighting Science ("ELS").[252] LSG alleged that ELS's use of the name "Electronic Lighting Science" and the phrase "Electronic Lighting Science LED Products" to sell LED lighting fixtures, bulbs and other products infringes LSG's registered marks.[253]

LSG's complaint signals the hybrid nature of the company's brand recognition and the alleged infringing activity at issue in the case. The complaint notes that LSG's eco-marks have become distinctive source identifiers because the company's advertising and sales have yielded "consumer and[] distributor acceptance and recognition" of its marks.[254] Moreover, the alleged infringing use of LSG's marks includes using the name "Electronic Lighting Science" to market and sell LED products to "distributors and individuals."[255] In light of LSG's eco-mark

251. *See* Complaint ¶¶ 3, 5, Lighting Sci. Grp. Corp. v. Elec. Lighting Sci., Inc., No. 2:12-cv-05576-JFW-FMO (C.D. Cal. June 26, 2012).

252. *See id.* ¶¶ 6, 13–20.

253. *See id.* ¶¶ 13–20.

254. *See id.* ¶ 8.

255. *See id.* ¶ 16.

enforcement on behalf of both LED distributors and individual purchasers of LED lighting products, this is at once a traditional paradigm and new paradigm greenwashing case, and this case seeks to ensure that both individual and commercial consumers enjoy high-quality, energy-efficient LED lighting products.

D. New Paradigm Fraud Cases

A third species of new paradigm cases involves allegations of fraud in connection with renewable energy and fuel credits. The rise of government-issued credits to stimulate the production and use of renewable energy and reduce greenhouse gas emissions has created secondary markets in which the credits are traded and sold.[256] Parties required to maintain certain levels of renewable energy or fuel production can purchase valid credits to demonstrate compliance, and these new markets can be fertile ground for fraudulent representations.[257]

Promulgated under the Clean Air Act, the EPA Renewable Fuel Standard ("RFS") Program requires "obligated parties" to sell gasoline containing a percentage of renewable fuel.[258] To ensure that sufficient volumes of renewable fuel are produced and imported, companies in the gasoline business are required to meet annual Renewable Volume Obligations.[259] One way these parties meet their obligations is by acquiring enough Renewable Identification Numbers ("RINs") to demonstrate compliance.[260] A RIN is a numeric code generated by a renewable fuel producer or importer that represents a gallon of renewable fuel.[261]

256. *See* David Shaffer, *Cargill Says It's a Victim in Fraud Scheme*, STAR TRIB. http://www.startribune.com/business/171077631.html?refer=y (last updated Sept. 24, 2012) ("Companies can use RINs as proof of compliance with the federal biofuel blending mandate . . . . The credits also can be legally traded on the commodities market separate from the fuel itself.").

257. *See id.* ("Although the U.S. Environmental Protection Agency set up the system, it says that trading in RINs is an unregulated 'buyer-beware' market. Several oil companies, including Koch Industries, owner of a Minnesota refinery, also have been victims of the scam.").

258. *See, e.g.*, Cargill, Inc. v. Int'l Exch. Servs., LLC, No. 1:12-cv-07042-HB, 2013 WL 76209, at *1 (S.D.N.Y. Jan. 8, 2013) ("Under the Clean Air Act ('CAA') and regulations issued by EPA governing the Renewable Fuel Standard Program, certain obligated parties may sell gasoline that contains an applicable percentage of renewable fuel only; the Renewable Volume Obligation ('Volume Obligation').").

259. *See* Complaint ¶ 10, Cargill, Inc. v. Int'l Exch. Servs., LLC, No. 12 Civ. 7042(HB) (S.D.N.Y. Sept. 18, 2012), 2012 WL 4090686; *see also* To Whom Does the Renewable Volume Obligation Apply?, 40 C.F.R. § 80.1106 (2013); Who is an Obligated Party Under the RFS Program?, 40 C.F.R. § 80.1406 (2013).

260. *Id.* ¶ 10.

261. *Id.* ¶ 9.

Cargill, a large multinational agribusiness, produces and sells biofuels and participates in energy markets.[262] In September of 2012, Cargill sued International Exchange Services ("IES"), a commodities trader, for allegedly selling it invalid RINs.[263] According to the complaint, the disputed RINs were purportedly originally issued by a producer called Double Diamond Biofuels ("Double Diamond"), but the RINs were invalid and not actually generated by Double Diamond.[264] Although the two claims were dismissed, including the claim under the Clean Air Act, Cargill may go forward with its breach of contract claim.[265]

It is unclear from the Cargill complaint who originally perpetrated the fraud, and indeed the named defendant may not even know, but the fraudulent activity represents a grave instance of greenwashing. The creation of invalid RINs undermines the policy of the RFS Program—to ensure a certain level of renewable fuel in gasoline—by damaging the market for valid RINs and ultimately reducing the actual volume of biofuels in circulation.[266] The RIN scam has hurt the biofuels industry by making obligated parties more wary of purchasing the credits from biodiesel producers.[267] The fraud and resulting damage are recognizable under the new paradigm when we view putative RIN purchasers like Cargill as green commercial consumers falling victim to false representations about the validity of renewable energy-based financial products.

IV. IMPLICATIONS AND RECOMMENDATIONS

This Part begins with a discussion of the greenwashing "blind spot"—the lack of recognition of commercial consumer greenwashing cases by the media, legal commentators, and research organizations. Next, this Part analyzes the implications raised by the new paradigm cases. These include a new recognition that the greenwashing problem may be larger

262. *Id.* ¶ 7.

263. *See id.* ¶¶ 13–18.

264. *Id.* ¶ 17.

265. *See* Cargill, Inc. v. Int'l Exch. Servs., LLC, No. 1:12-cv-07042-HB, 2013 WL 76209, at *5 (S.D.N.Y. Jan. 8, 2013) (granting IES's motion to dismiss in part with respect to violations of the Clean Air Act and breach of warranties, and denying the motion to dismiss plaintiff's breach of contract claim).

266. *See* Shaffer, *supra* note 256 ("Ben Evans, director of federal communication for the National Biodiesel Board, a trade group, noted that 'A lot of our smaller producers have had trouble selling their RINs because obligated parties [such as oil companies] are reluctant to do business with them.'").

267. *Id.*

than previously thought, the emergence of a more complex picture of the role of green brand owners in greenwashing cases, and recognition that we lack public regulation and enforcement of new paradigm greenwashing activity. In view of the ramifications, this Part suggests areas of inquiry for further research on new paradigm greenwashing activity and proposes policy prescriptions for government oversight in commercial consumer greenwashing cases.

A. The Greenwashing Blind Spot

Despite multiple instances of new paradigm greenwashing cases going back at least as far as 2006, and the fact that, at bottom, the allegations of these cases comport with the common definition of greenwashing, green commercial consumer cases appear to represent a blind spot for traditional media, research organizations, scholars, and even experienced legal practitioners. This oversight may be due to the lack of individual green consumer involvement, which has been the touchstone of environmental marketing cases since the early 1970s.[268] From a legal perspective, the absence of conventional false advertising claims might also contribute to this gap. As discussed in the previous Part, the new paradigm causes of action include breach of contract and warranty, eco-mark infringement, and in some instances, fraud.[269]

Recent coverage of greenwashing in the mainstream media has focused expressly and almost exclusively on consumer products.[270] Such articles and news reports typically discuss products used in the home such as paper towels and home cleaners.[271] Perhaps this is unsurprising given the target audience.

However, this blind spot extends to recent scholarly articles on greenwashing, as well. Published law review articles on the subject typically focus on environmental marketing claims directed to individual

268. *See supra* Part I.B–C.

269. *See supra* Part III.B–D.

270. *See, e.g.*, *10 Worst Household Products for Greenwashing*, CBC NEWS (Sept. 14, 2012), http://www.cbc.ca/news/canada/story/2012/09/14/greenwashing-labels-marketplace.html (listing antibacterial dish soap, biodegradable cloth, a frying pan, and household cleaners as products subject to greenwashing); Hassan Mirza, *Coke, Fritos, and Walmart Greenwashing: Are the Products You Buy Really Green?*, POLICYMIC, http://www.policymic.com/articles/6781/coke-fritos-and-walmart-greenwashing-are-the-products-you-buy-really-green (last visited Apr. 2, 2013) (discussing greenwashing in connection with lighting products, baby products, and soft drinks); Adria Vasil, *How Can I Tell Which Product Seals are Greenwash?*, NOWTORONTO, http://www.nowtoronto.com/columns/ecoholic.cfm?content=188565, (last visited May 30, 2013) (discussing seals and labels used in connection with paper towels, cleaning products, home windows).

271. *See* sources cited *supra* note 270.

consumers and treat greenwashing as a problem affecting individual green consumers, sometimes with special consideration given to certain demographics such as urbanites and senior citizens.[272] Some authors are quite explicit in this regard, expressing their concern, for example, that "individual consumers must be assured that the products they purchase do, in fact, promote social change" through genuine environmental benefits.[273] Such authors often underscore their emphasis on individual green consumers by citation to and discussion of consumer surveys.[274] Even recent articles by legal experts who practice in the field of advertising and green branding almost exclusively discuss individual consumer products and the traditional paradigm cases involving those products.[275]

While there is some recognition by scholars and the media that greenwashing extends beyond narrow environmental marketing messages targeted to particular consumer products, these discussions do not take into account cases involving green commercial consumers. Instead, the broader view of greenwashing is limited to general corporate

272. *See, e.g.*, Elizabeth K. Coppolecchia, *The Greenwashing Deluge: Who Will Rise Above the Waters of Deceptive Advertising?*, 64 U. MIAMI L. REV. 1353, 1355–56 (2010).

> Consumers who purchase 'green' products may be completely unaware that their desire to purchase such products is heavily influenced by a need to join the 'group' of the moment, which currently happens to relate to socially conscious consumers, perhaps because 'guilt over the environment is at a historic high.' . . . . The AARP recently conducted a study, determining that 'there are 40 million 'green boomers' in the United States today,' meaning that over half of the nation's 'baby boomers' currently consider themselves to be 'environmentally conscious consumers.'

Id.; Jessica E. Fliegelman, Note, *The Next Generation of Greenwash: Diminishing Consumer Confusion Through a National Eco-labeling Program*, 37 FORDHAM URB. L.J. 1001, 1004 (2010).

273. *See* Fliegelman, *supra* note 272, at 1004.

274. *See, e.g.*, *id.* at 1006 ("A study conducted in 2009 by WPP Green Brands found that thirty-seven percent of consumers factored the environmental attributes of a product into their purchasing decisions, and seventy-seven percent of consumers considered a company's 'environmentally-friendly reputation to be significant."); Jacob Vos, Note, *Actions Speak Louder than Words: Greenwashing in Corporate America*, 23 NOTRE DAME J.L. ETHICS & PUB. POL'Y 673, 680 (2009); Robert B. White, Note, *Preemption in Green Marketing: The Case for Uniform Federal Marketing Definitions*, 85 IND. L.J. 325, 325 (2010).

275. *See, e.g.*, David J. Gilles & Matthew T. Kemp, *Greenwash: Overselling a Product's 'Greenness'*, WISC. LAW., http://www.wisbar.org/NewsPublications/WisconsinLawyer/Pages/Article.aspx?Volume=85&Issue=6&ArticleID=2395, (last visited May 30, 2013) (discussing Windex greenwashing case and Fiji water bottle case); Ann Marie Mortimer, *7 Deadly Sins of "Green" Marketing*, INSIDE COUNS. (Dec. 7, 2012), http://www.insidecounsel.com/2012/12/07/7-deadly-sins-of-green-marketing (discussing different types of greenwashing by retailers and producers of products such as paper products, beauty products, and cleaning supplies).

environmental sustainability messaging[276] or government legislation.[277] In each case, however, the false or deceptive environmental marketing claims discussed are directed at individual consumers.

Even *The Six Sins of Greenwashing*, published in 2007 by TerraChoice Environmental Marketing, and perhaps the most influential and most frequently cited greenwashing study during the period of the clean tech revolution, is exclusively focused on consumer products.[278] This is evident in the subtitle of the study—*A Study of Environmental Claims in North American Consumer Markets*[279]—as well as the parameters of its survey, which was of "big box" stores and identified 1018 individual "consumer products."[280] One major consequence of the pervasive greenwashing discovered and documented by the study is that "the individual consumer has been misled."[281] Subsequent iterations of the study continued this theme and gave the appearance of an even narrower focus. *The Seven Sins of Greenwashing*, published in 2009, featured "product categories of special consumer interest" such as "toys, baby products, cosmetics, and cleaning products."[282] In 2010, TerraChoice published *The Sins of Greenwashing Home and Family Edition*, which

276. *See Walmart Accused of Greenwashing*, ENVTL. LEADER (Mar. 8, 2012), http://www.environmentalleader.com/2012/03/08/walmart-accused-of-greenwashing/ ("Since Walmart unveiled its sustainability campaign in 2005, the number of Americans with an unfavorable view of the company has fallen by nearly half, but its greenhouse gas emissions are increasing rapidly, according to Walmart's Greenwash."). *See generally* Joseph J. Swartz, Comment, *Thinking Green or Scheming Green?: How and Why the FTC Green Guide Revisions Should Address Corporate Claims of Environmental Sustainability*, 18 PENN. ST. ENVTL. L. REV. 95, 97-98 (2009) (arguing that the FTC should expand the reach of the Green Guides to include and regulate corporate claims of environmental sustainability).

277. *See* Gibson, *supra* note 19, at 423 ("'Greenwash' is not limited to consumer advertising and marketing: the Clear Skies Act enacted under the Bush Administration has drawn nationwide ire from environmental groups for weakening environmental protections despite being marketed as environmentally beneficial.").

278. *See generally* TERRACHOICE ENVTL. MKTG., INC., THE SIX SINS OF GREENWASHING: A STUDY OF ENVIRONMENTAL CLAIMS IN NORTH AMERICAN CONSUMER MARKETS (2007), *available at* http://sinsofgreenwashing.org/index6b90.pdf (discussing its study of greenwashing in connection with consumer products sold at 'big box' stores).

279. *See id.*

280. *Id.* at 1 ("In an effort to describe, understand, and quantify the growth of greenwashing, TerraChoice Environmental Marketing, Inc. conducted a survey of six category-leading 'big box' stores. Through these surveys, we identified 1,018 consumer products bearing 1,753 environmental claims.").

281. *Id.* ("These findings suggest that greenwashing is pervasive, the consequences of which are significant . . . .").

282. *See* TERRACHOICE ENVTL. MKTG., INC., THE SEVEN SINS OF GREENWASHING: ENVIRONMENTAL CLAIMS IN CONSUMER MARKETS: SUMMARY REPORT: NORTH AMERICA 2 (2009), *available at* http://sinsofgreenwashing.org/indexd49f.pdf.

focused on environmental marketing claims made in connection with home and family products.[283]

To be sure, much of this media, literature, and research make valuable contributions to our understanding of the nature of greenwashing and public awareness of the problem. The scholarly articles, in particular, provide thoughtful insights and creative ideas on policies to combat the problem of greenwashing. However, these contributions apply to the traditional paradigm greenwashing cases involving environmental marketing of consumer products to individual consumers.

It is important to note, however, that these cases remain very relevant. The new greenwashing paradigm has not replaced the traditional paradigm—as discussed above,[284] traditional paradigm greenwashing cases are still prevalent today and will remain so. However, the new paradigm must also be recognized and considered as it represents a relatively new and largely ignored part of the greenwashing story. Green commercial consumer cases such as those involving wind turbines, solar panels, and cogeneration units, have potentially significant implications due to the impact these large green technology products have on climate change and other aspects of the environment.[285] The narrow and exclusive attention paid to traditional greenwashing paradigm cases, perpetuated and reinforced by recent literature and research, therefore represents a serious greenwashing blind spot. The new greenwashing paradigm, with a more expansive view encompassing environmental marketing to green commercial consumers, eliminates this blind spot.

B. Implications of New Paradigm Cases

1. A Larger Problem than We Thought

Eliminating the greenwashing blind spot to reveal the previously unexamined green commercial consumer cases gives rise to several implications. First is the recognition that, by previously ignoring a large and significant subset of greenwashing cases, we may have seriously underestimated the effects of greenwashing. Accordingly, greenwashing is likely more problematic and more pervasive than previously recognized and acknowledged because it is not limited to individual consumer products having purported green features, but also involves

283. *See* TERRACHOICE, THE SINS OF GREENWASHING: HOME AND FAMILY EDITION 5 (2010), *available at* http://sinsofgreenwashing.org/index35c6.pdf.

284. *See supra* Part I.C.

285. *See supra* Part III.B–D.

major industrial and commercial green technologies whose sole purpose is to provide environmental benefits through clean energy generation. Counterfeit solar modules can potentially impact thousands of customers of a company like Suntech, which has sold and delivered more than 15 million modules.[286] Assuming a successful sale and reliable turbines, the Glenmore and Kumeyaay wind farms together should produce over sixty MW of power.[287] These renewable energy products and projects can have a large impact on the environment and the fight against climate change.

2. More Complex Role of the Green Brand Owner

Not only did we underestimate the scope of the problem, we also missed the subtleties inherent in some of the new greenwashing cases. A second implication is that the players and activities in greenwashing and anti-greenwashing actions are more nuanced than previously thought. In particular, the eco-mark infringement actions under the new paradigm reveal that green brand owners are not only greenwashers, as it appeared in the traditional paradigm cases, but also undertake the important role of anti-greenwashing enforcers.

Under the traditional paradigm, the established green brand owner has almost exclusively played just one role: the greenwasher. From Standard Oil's purportedly emissions-reducing Chevron F-310 gasoline and National Fuelsaver's allegedly false claims about the Gasaver's fuel economy benefits to Hefty's "degradable" garbage bags, the Windex Greenlist label, and the Green Drop label on Fuji's water bottles, it was always the green brand owner engaged in the alleged false or misleading environmental marketing. The false or misleading product information, and the harm, flowed in a linear fashion from green brand owner to individual consumer. Thus, one might infer from the traditional paradigm greenwashing cases that the green brand owner is always the transgressor accused of deceiving consumers.

However, a more complex picture emerges in the new paradigm eco-mark infringement actions. In these cases, the green brand owner plays

286. *See* Press Release, Suntech, Suntech Reports Third Quarter 2011 Financial Results (Nov. 22, 2011), *available at* http://ir.suntech-power.com/phoenix.zhtml?c=192654&p=irol-newsArticle&ID=1632766&highlight=.

287. *See* Complaint, *supra* note 175, at 15 ("Pursuant to the terms of the Agreement, Plaintiff paid $250,000 (the 'Fee') to Defendants as consideration for the exclusive right to purchase or sell Defendants' interests in its 14 megawatt wind farm project (the 'Project') during the term of the Agreement."); *see* Complaint, *supra* note 175, at 11 ("The Wind Farm, operational since January 16, 2006, consists of twenty-five G87X 2.0 MW wind turbines.").

the critical role of anti-greenwashing enforcer acting to protect themselves and green commercial consumers.[288] In the Suntech case,[289] the goods at issue were Suntech-branded solar modules, the deceptive environmental marketing claims were the false Sun Tech labels on counterfeit modules, and the anti-greenwashing enforcement in the form of the eco-mark infringement action was brought by Suntech Power Holdings on behalf of its green commercial consumers. The Nordic[290] and Voltaix[291] cases present analogous situations in which the companies that own the green brands, for wind turbines and solar manufacturing chemicals, respectively, brought eco-mark infringement actions against parties engaged in greenwashing via alleged infringement. Instead of linear flow of product information from green brand owner to consumer, the deceptive marketing in the eco-mark cases bypasses the green brand owner entirely and flows from infringer to commercial consumer.

In most of these cases, the greenwashing enforcers are also arguably victims of greenwashing as the harm flows not only to customers but also to green brand owners. Suntech is undoubtedly a valuable brand in the solar industry, and Nordic had much to protect in its trademark as well.[292] While these eco-mark owners wanted to protect their consumers from the effects of infringing goods, they were also almost certainly motivated to mitigate any harm to their brands from free riders and counterfeiters. Accordingly, one lesson learned from the new paradigm cases is that it would be wrong to assume the green brand owner plays the role of the transgressor in all greenwashing cases. Rather, green brand owners are multi-dimensional characters in the greenwashing story, playing different, often contradictory roles under the traditional and new paradigms.

288. It should be noted that, on rare occasions, a green brand owner acts as an anti-greenwashing enforcer in a traditional paradigm greenwashing case. *See* Complaint, Biodegradable Product Institute v. Le, Case No. 2:08-cv-03661-FMC-VBKx at ¶ 14 (C.D. Cal. June 4, 2008) (alleging defendants infringed plaintiff's COMPOSTABLE certification mark by displaying the mark on products that had not been certified). However, it is the perspective gained from viewing cases under the new paradigm that allows us to see this role of the Biodegradable Products Institute as anti-greenwashing enforcer in an eco-mark infringement action.

289. *Supra* Part III.C.1.

290. *Supra* Part III.C.2.

291. *Supra* Part III.C.3.

292. *See, e.g.*, Press Release, Nordic Windpower, Nordic Windpower Offered $16 Million DOE Loan Guarantee to Expand its US Wind Turbine Production (July 2, 2009), *available at* http://commerce.idaho.gov/news/2009/07/nordic-windpower-offered-16m-doe-loan-guarantee-to-expand-its-us-wind-turbine-production.aspx.

3. Very Limited Public Oversight

A third implication of implementing the new greenwashing paradigm is the existence of a large subset of potentially high impact cases prosecuted and resolved almost entirely by private legal actions. As discussed in Part III, the new paradigm cases include breach of contract actions, eco-mark infringement suits, and occasionally allegations of fraud. With the possible exception of some of the fraud cases in which alleged greenwashers may be subject to criminal prosecution, governments are not involved in green commercial consumer cases.[293]

This is in marked contrast to the traditional paradigm cases, in which consumer protection agencies of governments around the world complement private consumer actions with active policing and enforcement of false advertising laws on behalf of individual green consumers.[294] The lack of public oversight of new paradigm cases may be reason for concern. This author previously argued that public enforcement against traditional paradigm greenwashers is more predictable in its outcome and seems to yield more favorable results for individual green consumers than private actions.[295] To be sure, the new paradigm B-to-B scenarios differ from these individual consumer actions in that many green commercial consumers are more sophisticated than individuals and have greater resources to negotiate and litigate with new paradigm greenwashers. Nevertheless, a similar pattern could hold with regard to judicial outcomes of commercial consumer cases.

C. Recommendations

1. Further Research on Greenwashing Activity, Players, and Case Results

Recognition of the commercial consumer cases and their implications for the problem of greenwashing also opens the door to future avenues of research and to policy suggestions. As an initial matter, the new paradigm cases constitute a large new category of greenwashing activity, and the full effects of these legal actions have not been explored. Therefore, a necessary first step is to study these instances of commercial

293. *See supra* Part III.B–C (the new paradigm breach of contract and eco-mark infringement cases are actions between private parties).

294. *See supra* Part I.C.

295. *See generally* Eric L. Lane, *Consumer Protection in the Eco-mark Era: A Preliminary Survey and Assessment of Anti-greenwashing Activity and Eco-mark Enforcement*, 9 J. MARSHALL REV. INTELL. PROP. L. 742 (2010).

consumer greenwashing in greater detail. These new paradigm cases should be analyzed for the type of greenwashing activity at issue, the effectiveness of their results, and the roles of the players involved, particularly the green brand owner.

It would be useful to elucidate exactly what kinds of misrepresentations are being made to green commercial consumers by compiling a catalog of false or misleading claims. To this end, a report analogous to the TerraChoice study based on a survey of instances of new paradigm greenwashing—The Seven Sins of Greenwashing: Environmental Claims in *Commercial* Consumer Markets—would be valuable. Green commercial consumers could use this information to inform their purchasing decisions. Armed with these data, companies like DeWind, Kumeyaay, and Cogen would be in better equipped to identify greenwashing. They could take greater care in examining representations about the goods or services on offer, ask the right questions, and negotiate more secure deals. By the same token, the increased transparency might force manufacturers of clean tech goods and providers of green services to refrain from making false or deceptive claims and substantiate the representations they do make.

In addition, it would be helpful to study the outcomes of new paradigm cases. Analysis of jury verdicts, court orders, and settlements in commercial consumer greenwashing litigation could shed some light on the effectiveness of this anti-greenwashing activity. A systematic study of the results of these cases might provide an understanding of which remedies work and which do not, leading to informed recommendations about policies to protect green commercial consumers. It could also indicate whether the private legal actions that constitute the new paradigm cases are sufficient to combat this greenwashing or if some form of public enforcement would be necessary or desirable.

Finally, analysis of the roles of various players in greenwashing activity and anti-greenwashing enforcement could be useful. For instance, the green brand owner appears to be transgressor, victim, or enforcer depending on the type of case and whether it involves individual consumers or commercial consumers. It would be helpful to know whether this complexity means the green brand owner needs additional legal protection or support in some of the new paradigm cases.

2. Government Reporting Requirements and Enforcement

As discussed above, the government typically plays no role in B-to-B greenwashing cases. There is no public oversight of new paradigm

greenwashing activity, let alone public enforcement actions against the new greenwashers, despite a substantial public interest in growing the clean tech industry and generating power from renewable resources. In view of the potential environmental impact of private commercial consumer actions and the uncertainty about the adequacy of their results, public oversight of these cases and public enforcement may be desirable.

To give governments the ability to track these cases in the future, certain agencies could impose a mandatory reporting requirement for commercial consumer greenwashing litigation. Any time a complaint is filed initiating a new paradigm anti-greenwashing legal action, the plaintiff would be obligated to report the existence of the litigation to the government. This would ensure that the government is at least aware that such cases have been filed.

A duty to report litigation to a government agency whose mission relates to the nature of the dispute is not unprecedented. The U.S. Patent and Trademark Office ("PTO"), for example, requires that an applicant for a patent must inform the PTO of any litigation involving the same subject matter as that of the patent application.[296] In addition, the specialized reissue application process in the PTO triggers a duty to report litigation or any other proceedings involving the same patent.[297]

Good candidate agencies to process new paradigm greenwashing litigation reports include the FTC, the EPA, and the DOE. As discussed above, the FTC has considerable experience with the subject of environmental marketing. The agency exercises its expertise in both regulation of environmental marketing claims, as evidenced by the Green Guides, and in anti-greenwashing enforcement, which the agency has undertaken numerous times dating back to the early 1990s. The EPA has environmental expertise and is no stranger to reporting requirements, including a rigorous Greenhouse Gas Reporting Program ("GHGRP").[298]

296. *See* DEP'T OF COMMERCE, MANUAL OF PATENT EXAMINING PROCEDURE § 2001.06(c) (8th Ed. Latest Rev. Aug. 2012), *available at* http://www.uspto.gov/web/offices/pac/mpep/index.html ("Where the subject matter for which a patent is being sought is or has been involved in litigation, the existence of such litigation and any other material information arising therefrom must be brought to the attention of the U.S. Patent and Trademark Office.").

297. *See* Original Patent; Continuing Duty of Applicant, 37 C.F.R. § 1.178(b) (2013) ("In any reissue application before the Office, the applicant must call to the attention of the Office any prior or concurrent proceedings in which the patent (for which reissue is requested) is or was involved, such as interferences, reissues, reexaminations, or litigations and the results of such proceedings.") (internal citation omitted).

298. *See EPA Greenhouse Gas Reporting Program*, EPA, http://www.epa.gov/ghgreporting/ (last visited Jan. 23, 2013); *see also*, 40 C.F.R. §§ 98.32–34, 98.42–44, 98.52–54, 98.62–64 (2013) (discussing greenhouse gas emissions reporting, calculation, and monitoring requirements for several categories of emissions sources).

The GHGRP requires that certain businesses and institutions report greenhouse gas data and other relevant emissions information.[299] The DOE has been closely involved in green technology research and development efforts and clean energy policy in recent years.[300] Moreover, together with the EPA, the agency works directly with businesses on the data intensive Energy Star energy efficiency certification program.[301] The DOE even has some enforcement experience in connection with the Energy Star program. Outside the United States, consumer protection agencies such as Britain's Advertising Standards Authority and the Australian Consumer and Competition Commission, as well as analogous environmental and energy ministries could impose similar requirements.

To ensure the government agency receives complete information, the reporting requirement might be continuous, and extend to any dispositive rulings, settlements, and remedies resulting from the litigation. Again, the PTO reporting requirement provides instructive precedent here. The PTO recognizes that documents and evidence produced in litigation must be reported if they contain information material to the examination of the subject patent application.[302] With access to this information on an ongoing basis, the agency would be equipped to assess the effectiveness of private anti-greenwashing enforcement activity. If, after a full review of a case, the agency determines that the outcome was not sufficient to protect the green commercial consumer or consumers affected, a formal investigation could be launched.

At this point in the process, it would be beneficial for the investigating agency to examine whether the greenwashing activity at issue could have a significant adverse impact on efforts to curb climate change. Here, the expertise of the EPA and the DOE would be quite valuable. Taking the

299. *See EPA Greenhouse Gas Reporting Program: For GHG Reporters*, EPA, http://www.epa.gov/ghgreporting/reporters/index.html (last visited Jan. 23, 2013).

300. *E.g.*, *From R&D to You: A Thriving Innovation Engine*, DEP'T OF ENERGY (Oct. 25, 2011, 11:04 AM), http://energy.gov/articles/rd-you-thriving-innovation-engine ("The Energy Department plays a key role in moving innovative energy technologies developed in research labs across the country into the commercial marketplace, fueling the innovation engine that powers the U.S. economy."); *Secretary Chu Unveils the 2011 Strategic Plan*, DEP'T OF ENERGY (May 12, 2011, 1:02 PM), http://energy.gov/articles/secretary-chu-unveils-2011-strategic-plan (detailing how the Department's 2011 Strategic Plan serves as a blueprint to help address the nation's energy, environmental, and nuclear challenges).

301. *See About ENERGY STAR*, ENERGYSTAR, http://www.energystar.gov/index.cfm?c=about.ab_index (last visited Apr. 15, 2013).

302. DEP'T OF COMMERCE, *supra* note 296, at § 2001.06(c) ("Such [material] information might arise during litigation in, for example, pleadings, admissions, discovery including interrogatories, depositions, and other documents and testimony.").

breach of contract actions involving wind farms and cogeneration equipment and the Suntech counterfeit solar module case as representative examples, new paradigm greenwashing cases arguably invoke this concern. In the case where a new paradigm lawsuit is deemed to yield unsatisfactory results for both a green commercial consumer and the environment, a potential next step would be public enforcement against the commercial greenwasher. A separate action brought by the FTC or DOE might achieve the kind of positive result that was lacking in the private lawsuit. The agency should step in, however, only after the lawsuit has been finally resolved and the parties have exhausted all private legal remedies. Thus, the public enforcement option would be a last resort exercised under limited circumstances to minimize interference in private disputes. In this way, a reporting requirement informing an agency of commercial consumer greenwashing, coupled with an agency enforcement option, could be a powerful tool to combat new paradigm greenwashing activity.

V. CONCLUSION

Greenwashing is a pervasive problem that, cumulatively, can have a significant adverse impact on efforts to mitigate climate change. Ubiquitous today, deceptive environmental marketing dates back to at least the early 1970s. Prior to the current clean tech boom of the early twenty-first century, nearly all instances of suspect environmental marketing were perpetuated in connection with general corporate spin or green branding of consumer products, and were directed to individual green consumers. Accordingly, the study, analysis and commentary on greenwashing focused exclusively on consumer products and individual consumers. Anti-greenwashing efforts were overwhelmingly comprised of legal actions by and on behalf of individual green consumers. Thus, the traditional greenwashing paradigm contemplated only false or misleading environmental marketing directed to individual green consumers, its effects on these consumers, and how to protect individual consumers.

With the advent of the clean tech revolution, the lines of communication for environmental marketing messages became more numerous and complex. The clean tech industry, a large commercial ecosystem comprised of many business consumers situated at various points in the supply chain, has proved to be fertile ground for false and deceptive representations of environmental benefits. Indeed, a number of instances of false, misleading, and even fraudulent claims made to

green commercial consumers in connection with renewable energy products and projects have arisen in the last several years. Such cases, though representing a significant new category of greenwashing, do not register under the traditional greenwashing paradigm. In other words, the traditional paradigm creates and perpetuates a significant greenwashing blind spot.

Accordingly, a new greenwashing paradigm is required to recognize the important new species of cases that implicate critical green technologies and the commercial consumers that purchase, deploy and operate them. The new paradigm views greenwashing expansively to include false or deceptive representations made to green commercial consumers and legal actions brought by or on behalf of these clean tech commercial consumers. By implementing the new greenwashing paradigm, we recognize these green commercial consumer cases for what they really are—greenwashing cases.

The ramifications of this are significant. First, we may have dramatically underestimated the scope of the greenwashing problem. Second, our consistent typecasting of the green brand owner in the role of greenwasher was over-simplified. Rather, the eco-mark infringement suits that emerge under the new paradigm demonstrate that the green brand owner plays a more nuanced role as both victim and anti-greenwashing enforcer. Finally, it becomes apparent that we lack any government enforcement or even oversight of this large and potentially environmentally damaging class of greenwashing activity.

Accordingly, further research and study of new paradigm greenwashing cases is needed to fully understand the type of activity involved, its potential impact, and the effectiveness of any remedies achieved. Government agencies charged with consumer protection, environmental protection, and energy policy might consider implementing a reporting requirement for new paradigm greenwashing litigation to facilitate some level of public oversight. The government could bring independent public enforcement actions in cases where the greenwashing activity would have adverse environmental impact and private legal actions have not achieved satisfactory results. The new greenwashing paradigm, then, provides the broader vantage point necessary to identify, understand, and hopefully combat, all instances of greenwashing.