

Articles

THE NEXT GENERATION OF TRADE AND ENVIRONMENT CONFLICTS: THE RISE OF GREEN INDUSTRIAL POLICY

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ABSTRACT—A major shift is transforming the trade and environment field, triggered by governments' rising use of industrial policies to spark nascent renewable energy industries and to restrict exports of certain minerals in the face of political economy constraints. While economically distorting, these policies do produce significant economic and environmental benefits. At the same time, they often violate World Trade Organization (WTO) rules, leading to increasingly harsh conflicts between trading partners.

This Article presents a comprehensive analysis of these emerging conflicts, arguing that they represent a sharp break from past trade and environment disputes. It examines the causes of the shift and the nature of the industrial policies at issue. The ascendance of these Next Generation conflicts transforms both the international and domestic political economies of trade litigation and environmental policy. It raises implications for the choice of forum for trade litigation, the divide between industrialized and developing countries' strategic interests, the stability of domestic political alliances, and the availability of WTO legal exceptions for environmental measures.

Perhaps surprisingly, the most worrisome implication of Next Generation cases for both environmental protection and trade liberalization arises from often-overlooked trade remedy laws. The choice of litigation forum matters greatly because the compliance options differ depending on the forum. As a result, the environmentally harmful consequences of Next Generation cases are likely to be greater in domestic trade remedies cases than in WTO dispute settlement cases. To mitigate the environmental harms from Next Generation cases and reduce the threat of a green trade war, this Article suggests that we focus on reforming domestic trade remedies rules.

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INTRODUCTION

Conflict between international trade and environmental protection is once again on the rise. After a decade of tranquility, major trading powers are aggressively challenging each other’s pro-environmental policies in the name of global trade rules. Indeed, 2012 proved to be the most contentious year ever, with more conflicts looming on the horizon.

In March 2012, the United States, EU, and Japan joined forces to challenge China at the World Trade Organization (WTO) over China’s export restrictions on rare earth minerals, enacted allegedly for environmental reasons.¹ Two weeks later, a WTO panel heard oral arguments in a case brought by Japan and the EU over Ontario’s feed-in tariffs for renewable energy.² In May 2012, the U.S. slapped punitive tariffs

¹ Alan Beattie et al., *Fight Against China on Rare Earths*, FIN. TIMES (Mar. 13, 2012, 6:34 PM), <http://www.ft.com/intl/cms/s/0/4c3da294-6cc2-11e1-bd0c-00144feab49a.html#axzz2if0z1fA4>.

² Shamsiah Ali-Oettinger, *WTO Hearing: Canada Defends Its FITs*, PV MAG. (Mar. 30, 2012), http://www.pv-magazine.com/news/details/beitrag/wto-hearing--canada-defends-its-fits_100006288/#axzz2o28QMISl.

on Chinese solar panels up to 250%, denouncing Chinese manufacturers for unfairly dumping their goods into the American market.³ China, in turn, attacked U.S. states' rebates for renewable energy installations.⁴ By September 2012, the EU had opened its own investigation into unfair practices of China's solar panel manufacturers.⁵ Weeks later, China responded by filing its own WTO case against the European feed-in tariffs for violating WTO rules.⁶ The year ended with a WTO panel finding Ontario's feed-in tariff illegal.⁷ This list is but a sampling of the growing conflicts.⁸ As we shall see, 2013 has proven to be equally contentious, with several important WTO rulings and confrontations over tariffs imposed on renewable energy goods.⁹

Deep tension between the competing goals of global governance regimes—encouragement of national environmental policies versus removal of protectionist trade barriers—is not new. The last time trade and environment conflicts were at a similar state of high alert was the mid-1990s, when the United States imposed environmental conditions on imports of tuna and shrimp, and developing countries successfully challenged these regulations as illegal under international trade law. The recent cases, however, represent a dramatic departure from past conflicts. They are driven by the rapid rise of green industrial policies—the application of traditional industrial policy instruments to spur the development of renewable energy and environmentally friendly industries.

Indeed, the policies underlying the recent disputes have more in common with recent industrial policy measures in the steel, automobile, and semiconductor sectors than they do with the import measures on tuna and shrimp in the environmental disputes of the recent past. Despite this difference, however, these industrial policies have as large, if not larger,

³ Ehren Goossens et al., *U.S. Solar Tariffs on Chinese Cells May Boost Prices*, BLOOMBERG (May 18, 2012, 3:56 AM), <http://www.bloomberg.com/news/2012-05-17/u-s-solar-tariffs-on-chinese-cells-may-boost-prices.html>.

⁴ James T. Areddy & Wayne Ma, *Beijing Flares Up at U.S. on Solar Tariff*, WALL ST. J., May 25, 2012, at B3.

⁵ Keith Bradsher, *Europe to Investigate Chinese Exports of Solar Panels*, N.Y. TIMES, Sept. 6, 2012, at B3.

⁶ Request for Consultations by China, *European Union and Certain Member States—Certain Measures Affecting the Renewable Energy Generation Sector*, WT/DS452/1 (Nov. 7, 2012).

⁷ Panel Report, *Canada—Certain Measures Affecting the Renewable Energy Generation Sector, Canada—Measures Relating to the Feed-in Tariff Program*, §§ VIII.A.1, VIII.B.1, WT/DS412/R, WT/DS426/R (Dec. 19, 2012) [hereinafter *Canada-Renewable Energy Panel Report*].

⁸ Other disputes include commencement of trade remedies cases by the United States in January 2012 against Chinese and Vietnamese wind turbines, by China in June 2012 against American and South Korean polysilicon producers, and by India in November 2012 against Chinese, American, Malaysian, and Taiwanese manufacturers of solar modules. In addition, a dispute of what we label the “Classic” variety also occurred between the EU and others over the EU's proposed aviation emissions trading scheme. More details about each of these cases will be discussed later in the Article.

⁹ See *infra* Part II.C.

impacts on the environment, because they concern dirty production and the renewable technologies held out as necessary to combat climate change. And like the industrial policies of the past, they too are giving rise to contentious trade disputes because they flout established trade norms of nondiscrimination and “fair” pricing. This is giving rise to a set of what we call “Next Generation” trade and environment conflicts. This Article examines how Next Generation conflicts significantly raise the stakes for a trade war and will dominate the trade and environment discourse for the coming decade. We believe that they force a profound reevaluation of our assumptions about trade and environment disputes in four key ways:

First, the geopolitical dynamics of trade and environment conflicts are becoming more complex. Developed and developing countries alike are embracing green industrial policies that run up against and, in some cases, clearly conflict with trade disciplines. The earlier cases of the 1990s presented a simple North–South divide. In “Classic” trade and environment disputes such as *Tuna/Dolphin*¹⁰ and *Shrimp/Turtle*,¹¹ developed countries used border-access measures to improve the environmental behavior of developing-country trading partners. Today, though, the North–South divide of the earlier era has disappeared. Both developed and developing countries are adopting green industrial policy tactics that benefit the environment but upset trade rules.

Second, these conflicts are radically reconfiguring the domestic political economy surrounding trade and environment policymaking. The temporary “green–blue” alliance of convenience—composed of labor, domestic industry, and environmental groups—that emerged in past trade and environment disputes risks disintegrating as a result of the Next Generation cases. Labor unions are now leading the charge against foreign green industrial policies, while domestic industries are split depending on their position in the supply chain. Interestingly, most environmental groups have refused to engage, greeting the recent spate of litigation with near deafening silence—a dramatic shift from their earlier activism.

Third, the scope of the applicable law is expanding, with major implications for how adjudicators should balance competing trade and environmental interests. The Classic cases relied on General Agreement on Tariffs and Trade (GATT) Article XX exceptions and an implicit balancing test between the sovereign right of governments to protect the environment against the need to avoid protectionist policies hindering trade.¹² The green industrial policies challenged in Next Generation cases, by contrast,

¹⁰ Panel Report, *United States—Restrictions on Imports of Tuna*, DS21/R (Sept. 3, 1991), GATT B.I.S.D. (39th Supp.) at 155 (1993) [hereinafter *Tuna/Dolphin* Panel Report].

¹¹ Appellate Body Report, *United States—Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R (Oct. 12, 1998) [hereinafter *Shrimp/Turtle* AB Report].

¹² See General Agreement on Tariffs and Trade art. XX, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194 [hereinafter GATT].

involve local-content requirements, conditional subsidies, tax rebates, and artificial limits on inputs. None of the disciplines governing these trade measures involves a balancing test. So long as there is a prima facie violation of a trade obligation, the environmental policy must be eliminated. This is true no matter the size of the environmental harm addressed or the environmental benefit of the measures. In addition, judicial rulings in Next Generation cases have made clear that some countries—in particular, China—possess less room to implement measures to protect the environment than others, having bargained it away as the price for joining the WTO.

Finally, the forum choices for litigation are also expanding. Prior disputes were litigated solely through multilateral dispute settlement (i.e., the GATT and its successor, the WTO), but this is no longer the case. Next Generation conflicts, unlike their predecessors, are increasingly being litigated through domestic administrative proceedings, known as trade remedies cases. The result is that countries are now taking unilateral legal action against their competitors' green industrial policies, increasing the odds of a green trade war.

The impact of these profound shifts is not well understood and has received scant scholarly consideration to date. On the surface, it appears that the values of the trade regime—emphasizing nondiscrimination, trade liberalization and flexibility to counteract “dumping” of goods at unfair prices—are triumphing over the value of global environmental protection. Already, WTO rulings have outlawed local-content requirements on Canadian feed-in tariffs and Chinese export restrictions on raw materials—purportedly enacted for environmental reasons—because of their protectionist impact.¹³ Domestic administrative rulings in the United States have levied higher tariffs on cheap solar panels and wind turbines from China, raising the cost and slowing the pace of solar installations in the United States. The EU also has imposed tariffs on Chinese solar panel producers that refuse to limit their exports and sell above a certain minimum price. China, meanwhile, has imposed similar tariffs against foreign renewable energy products, and India may soon follow as well. Indeed, the few scholars following these cases have called for reform of the laws implicated by environmental disputes at the WTO so as to mitigate environmental harm, though political economy constraints make this unlikely.¹⁴

¹³ *Canada-Renewable Energy* Panel Report, *supra* note 7; Appellate Body Report, *China—Measures Related to the Exportation of Various Raw Materials*, WT/DS394/AB/R, WT/DS395/AB/R, WT/DS398/AB/R (Jan. 30, 2012) [hereinafter *China-Raw Materials* AB Report].

¹⁴ See, e.g., Luca Rubini, *Ain't Wastin' Time No More: Subsidies for Renewable Energy, the SCM Agreement, Policy Space, and Law Reform*, 15 J. INT'L ECON. L. 525 (2012); Aaron Cosbey, *Renewable Energy Subsidies and the WTO: The Wrong Law and the Wrong Venue*, SUBSIDY WATCH (Global Subsidies Initiative, Int'l Inst. for Sustainable Dev., Geneva, Switz.), June 2011, at 1.

We advance a counterintuitive argument. While trade interests will almost always triumph over environmental interests in Next Generation cases, we demonstrate that the practical damage to environmental priorities from WTO cases will often be much less than feared. Unlike the import measures at issue in the Classic cases, but like many other industrial policy measures, the legally problematic element of a Next Generation measure can be severed from the rest of the policy without sacrificing the environmental benefits altogether. Furthermore, in many instances, loopholes in WTO law allow the losing party to continue advancing elements of the green industrial policy—albeit in a different and potentially more costly, but WTO-compliant, mode. Therefore, the urgency to amend WTO rules may not be as great as some contend.

The real point of worry arising from the growing volume of Next Generation conflicts is the group of trade remedies cases brought through *domestic* administrative proceedings. Because these trade disputes are brought against companies and not governments, the options for postjudgment compliance differ. As we will demonstrate, all of a company's compliance options are likely to trigger a loss in environmental welfare. Consequently, the environmental harm from trade remedies cases is likely to be much greater than that from WTO cases.

Complicating this situation further is the fact that a choice of forum is not necessarily available in all instances. Instead, the available forum or fora depend on the facts of the case. As a result, the desired solution is not as simple as channeling cases away from domestic trade remedies proceedings and toward WTO litigation. The latter may be foreclosed in certain instances.

All this suggests that the existing calls to reform trade law to accommodate Next Generation environmental concerns have been misdirected. Rather than advocating reforms of WTO law, as the few scholars focused on this area have proposed, we contend that both environmentalists and fair trade advocates would be better served by narrowly amending domestic trade remedies regulations to prevent a harmful green trade war. Our arguments, therefore, are both descriptive and prescriptive.

Part I sets forth the Classic model of a trade and environment dispute, describing the significant cases of the 1990s and the common features of these conflicts. We do not argue that the Classic model is disappearing altogether. Indeed, it continues to resonate in proposals to address climate change through border measures. Importantly, though, Classic disputes are no longer the only game in town, nor even the dominant one.

Part II examines the rise of green industrial policies around the globe. Describing the causes for their growth, we present a framework for understanding the different types of instruments used to promote green industrial policy, such as subsidies and export restrictions. We identify the trade law issues raised by such policies, giving rise to a series of Next

Generation cases. Finally, we highlight the two different fora through which litigation of such disputes can be pursued—at the WTO or through domestic courts—and the details of the cases to date.

Whether measured numerically or by impact, the Next Generation disputes already comprise the lion's share of trade and environment litigation over the past five years. Part III analyzes the implications of this shift. Juxtaposing the Next Generation cases against the Classic cases, we explore the four major developments noted above. These cases are: (1) eroding the North–South divide of the Classic cases and complicating geopolitical dynamics, (2) reshaping the domestic political economy by threatening alliances among interest groups, (3) upending the balancing mechanism found in prior jurisprudence by implicating new treaty provisions, and (4) driving adjudication outside the WTO to domestic administrative courts. Taken together, they are leading to rulings less favorable to environmental interests.

In Part IV, we make a prescriptive argument, contending that individuals interested in reforming trade law to accommodate environmental interests should place greater emphasis on reforming trade remedy laws for conflicts adjudicated at the domestic level. This includes introducing limits on trade remedies for environmental goods (in terms of quantity, timing, and/or scope) and rebating tariff revenue to consumers to offset higher costs. Such reform proposals have been all but neglected to date.

In short, a profound shift is under way in the field of trade and environment disputes. This Article explores the rise of Next Generation conflicts, proposes a framework for thinking about them, explains why this matters, and sets out a new vision of what we should be doing about it.

I. THE CLASSIC VIEW OF TRADE AND ENVIRONMENT DISPUTES

A. *The Conventional Beliefs Arising out of the Classic Cases*

The trade and environment debate first emerged more than two decades ago, when a series of disputes highlighted the tension between the competing goals of trade liberalization and environmental regulation. These initial conflicts shared a common narrative: rich developed countries, often the United States, enacted domestic environmental measures such as protecting dolphins in the tuna fishery or reformulating for cleaner burning gasoline. These countries worried, however, that the new regulations would place their domestic producers at a competitive disadvantage if their trading partners did not adopt similar requirements. To ensure a level playing field, the measures included restrictions banning imported products that did not meet similar environmental criteria. Market access served as a carrot to improve environmental practices.

In reaction, poor exporting countries denounced these restrictions as a neocolonial stick, a protectionist barrier to keep their economies down. They attacked the restrictions as illegal under trade law and challenged the environmental conditions before the GATT and its successor, the WTO. This dynamic was repeated in the three most important trade and environment cases of the 1990s: *Tuna/Dolphin*, *Shrimp/Tuna*, and *U.S.-Gasoline*.¹⁵

Tuna/Dolphin addressed the use of purse-seine nets for tuna fishing.¹⁶ These nets often ensnared and drowned hundreds of thousands of dolphins that swam above the tuna in the Eastern Tropical Pacific. The U.S. had banned the use of such nets for its domestic fleet, but most countries continued the practice. In 1988, Congress amended the Marine Mammal Protection Act, requiring that any country exporting tuna to the U.S. certify that its fleet was not causing greater dolphin mortality than the U.S. fleet.¹⁷ The new law effectively banned tuna from any country using purse-seine nets as well as from all other intermediary countries that imported tuna from the uncertified country. Mexico challenged the law before the GATT as illegal discrimination.¹⁸

¹⁵ To be clear, environmental concerns have surfaced in other WTO cases besides these three Classic cases. Yet, in many of these “related” cases, a major motivation behind the ban was the negative impact on health, with the environment serving as a secondary argument. For example, in the 2003–2006 dispute, *EC-Approval and Marketing of Biotech Products* (also known as the “Genetically Modified Organisms” (GMO) case), several countries challenged the European Communities’ (EC) general moratorium on the approval of genetically modified food products. One of the reasons given by the EC to justify its moratorium was the need for precaution because of the uncertain impact the introduction of GMOs would have on the environment. A primary driving force behind the EC’s precautionary principle was not environmental protection, however, but concerns over human and animal health. See Panel Report, *European Communities—Measures Affecting the Approval and Marketing of Biotech Products*, WT/DS291/R, WT/DS292/R, WT/DS293/R (Sept. 29, 2006) (adopted Nov. 21, 2006). A similar concern over health was at the heart of the *EC-Asbestos* dispute concerning a French decree banning the import and sale of asbestos fibers. See Appellate Body Report, *European Communities—Measures Affecting Asbestos and Asbestos-Containing Products*, ¶¶ 2, 168, WT/DS135/AB/R (Mar. 12, 2001). Similarly, the *Brazil-Retreaded Tyres* dispute of 2005–2008 was focused primarily on health concerns, even though Brazil also raised points about the environmental impact of tire imports. See Appellate Body Report, *Brazil—Measures Affecting Imports of Retreaded Tyres*, ¶¶ 119, 129, WT/DS332/AB/R (Dec. 3, 2007).

¹⁶ *Tuna/Dolphin* Panel Report, *supra* note 10, ¶¶ 2.1–2.9.

¹⁷ Marine Mammal Protection Act Amendments of 1988, Pub. L. No. 100-711, § 4, 102 Stat. 4755, 4765 (codified as amended at 16 U.S.C. §§ 1361–1423h (2012)). The MMPA states that “[t]he Secretary of the Treasury shall ban the importation of commercial fish or products from fish which have been caught with commercial fishing technology which results in the incidental kill or incidental serious injury of ocean mammals in excess of United States standards.” 16 U.S.C. § 1371(a)(2) (2006).

¹⁸ *Tuna/Dolphin* Panel Report, *supra* note 10, ¶¶ 1.1, 3.1.

The *Shrimp/Turtle* dispute followed a similar fact pattern.¹⁹ Trawlers fishing for shrimp were inadvertently catching and drowning endangered sea turtles. Congress mandated that American shrimp boats equip their trawling gear with “turtle excluder devices” (TEDs) that allow turtles to escape. Many countries’ fleets did not adopt TEDs and, to level the playing field and strengthen global protections for sea turtles, the U.S. Congress passed an amendment to the Endangered Species Act in 1989 banning imports of shrimp from countries that could not certify that their shrimp fisheries did not threaten endangered sea turtles.²⁰ In practice, this meant that foreign shrimp producers needed to prove their fleets were using TEDs. India, Malaysia, Pakistan, and Thailand brought suit, challenging the U.S. ban for violating trade rules.²¹

A similar issue arose in *U.S.-Gasoline*.²² In 1994, the U.S. Environmental Protection Agency (EPA) issued the Gasoline Rule, aimed at reducing vehicle emissions of toxic air pollutants and ozone-forming volatile organic compounds.²³ The Rule mandated that all gasoline sold in the United States needed to conform to minimum “cleanliness” requirements as defined from a historic 1990 baseline.²⁴ Most American refineries were allowed to use an individualized 1990 baseline, but most foreign producers were required to meet a general statutory baseline based on the average quality of U.S. gasoline in 1990, regardless of their own particular situation.²⁵ Developing countries protested this difference as discriminatory, with Brazil and Venezuela leading the charge.²⁶

¹⁹ Panel Report, *United States—Import Prohibition of Certain Shrimp and Shrimp Products*, ¶¶ 2.4–2.14, WT/DS58/R (May 15, 1998) [hereinafter *Shrimp/Turtle* Panel Report]; *Shrimp/Turtle* AB Report, *supra* note 11, § I.

²⁰ This U.S. amendment is referred to as Section 609. Sea Turtle Conservation Amendments to the Endangered Species Act, Pub. L. No. 101-162, § 609, 103 Stat. 988, 1037 (1989) (amending 16 U.S.C. § 1537).

²¹ *Shrimp/Turtle* Panel Report, *supra* note 19, ¶¶ 2.7, 3.1.

²² Panel Report, *United States—Standards for Reformulated and Conventional Gasoline*, ¶¶ 2.5–2.7, WT/DS2/R (Jan. 29, 1996); Appellate Body Report, *United States—Standards for Reformulated and Conventional Gasoline*, § I.B, WT/DS2/AB/R (Apr. 29, 1996) [hereinafter *U.S.-Gasoline* AB Report].

²³ Regulation of Fuels and Fuel Additives: Standards for Reformulated and Conventional Gasoline, 59 Fed. Reg. 7716, 7716 (proposed Feb. 16, 1994) (to be codified at 40 C.F.R. pt. 80).

²⁴ *Id.* at 7716–17. No refinery was permitted to sell gasoline anywhere in the U.S. that was “dirtier” than the 1990 baseline. In addition, no refinery was allowed in certain urban areas unless it reduced emissions of particular pollutants by at least 15% against the 1990 baseline. *Id.* at 7716–17, 7851–52, 7856–57.

²⁵ *U.S.-Gasoline* AB Report, *supra* note 22. The Gasoline Rule sorted all gasoline refineries into one of two categories. Those in the first category were permitted to define their 1990 baseline on an individualized basis using refinery-specific quality data. Those in the second category were obliged to use a statutory baseline for their 1990 baseline, meaning that their baseline was based on the average quality of gasoline sold in the U.S. by all producers in 1990. To sort a refinery into one category or the other, the EPA considered various criteria which differed depending on whether the refinery was domestic or foreign. *Id.* This led to more American refineries being able to use an individualized

In all three cases, the GATT/WTO ruled in favor of the developing-country complainants.²⁷ Despite differences in their process and production methods, adjudicators found that the products were “like” goods under international trade law and in breach of the nondiscrimination obligation of GATT Articles I and/or III.²⁸ In turn, the U.S. tried to assert the defenses available under GATT Article XX.²⁹ Article XX(b) provides an exception for trade restrictions “necessary to protect human, animal or plant life or health,”³⁰ while Article XX(g) provides an exception for measures “relating to the conservation of exhaustible natural resources.”³¹

In evaluating a defense, an adjudicator engages in a two-part analysis. First, she determines whether the policy truly serves the substantive purpose being claimed—does it genuinely relate to conservation of an exhaustible resource or is it truly necessary to protect human life? If so, then the adjudicator must examine whether the measure nevertheless acts as “a disguised restriction on international trade” or was implemented in a discriminatory manner.³² This two-step evaluation is often referred to as a balancing test, weighing the legitimacy of the environmental policy challenged against its potential negative impact on trade.³³ In all three cases, adjudicators found that the United States did not qualify for the Article XX defenses.³⁴

The decisions in these so-called Classic cases were hugely influential, seizing the attention of both the environmental and academic communities,

baseline than foreign refineries. In May 1994, the EPA proposed to amend the Gasoline Rule so that the criteria used to determine whether a foreign refinery could use an individualized baseline would be made similar to the criteria employed for domestic refineries. However, this proposal was ignored by Congress, which enacted legislation in September 1994 denying the EPA funding to implement its May 1994 proposal. *Id.*

²⁶ *Id.* at 1.

²⁷ *Tuna/Dolphin* Panel Report, *supra* note 10, ¶ 7.1; *Shrimp/Turtle* AB Report, *supra* note 11, § VII; *U.S.-Gasoline* AB Report, *supra* note 22, § V.

²⁸ *Tuna/Dolphin* Panel Report, *supra* note 10, ¶ 5.9; *Shrimp/Turtle* AB Report, *supra* note 11, § VI.C.2, ¶ 23; *U.S.-Gasoline* AB Report, *supra* note 22, §§ I.C, III.C. GATT Article I, which enshrines the most-favored-nation treatment principle, prohibits WTO members from discriminating between their trading partners with respect to “like” products. GATT, *supra* note 12, art. I. Similarly, GATT Article III, which enshrines the national treatment principle, prohibits WTO members from discriminating between imported and domestically produced goods if they are “like” products with respect to fiscal charges, laws, and regulations. *Id.* art. III.

²⁹ *Tuna/Dolphin* Panel Report, *supra* note 10, ¶ 5.22; *Shrimp/Turtle* AB Report, *supra* note 11, § II.A.2; *U.S.-Gasoline* AB Report, *supra* note 22, at 7, 21.

³⁰ GATT, *supra* note 12, art. XX(b).

³¹ *Id.* art. XX(g).

³² *Id.* art. XX.

³³ See ANDREW T. GUZMAN & JOOST H.B. PAUWELYN, INTERNATIONAL TRADE LAW 358–59, 367 (2d ed. 2012); *WTO Rules and Environmental Policies: GATT Exceptions*, WORLD TRADE ORG., http://www.wto.org/english/tratop_e/envir_e/envt_rules_exceptions_e.htm (last visited Mar. 2, 2014).

³⁴ *Tuna/Dolphin* Panel Report, *supra* note 10, ¶ 7.1(a); *Shrimp/Turtle* AB Report, *supra* note 11, § VII; *U.S.-Gasoline* AB Report, *supra* note 22, § V.

and quite literally creating the field of trade and environment law. Within a remarkably short period, environmental groups hired trade lawyers and launched campaigns directed toward the threat that “GATTzilla” posed to the environment while a flood of scholarship assessed the uneasy relationship between environmental protection and trade protectionism.³⁵

The Classic cases were often portrayed in the United States as faceless, international bureaucrats obstructing the efforts of good, developed countries to protect the environment from bad, developing countries.³⁶ Within developed countries, the import bans enjoyed widespread support among unlikely allies in the domestic political economy. Environmental and animal rights groups welcomed them as a way to gain leverage over otherwise recalcitrant foreign governments.³⁷ Antiglobalization groups resented the influence of international organizations on national policy decisions.³⁸ Domestic producers supported the restrictions because they leveled the playing field.³⁹ And labor unions endorsed them because they helped keep jobs at home. No other policy issues aligned these disparate groups’ interests so closely, and the political alliance proved potent. During the 1999 WTO Ministerial (the so-called “Battle in Seattle”), hundreds of environmental and antiglobalization protesters dressed up as sea turtles, marching alongside members from the Teamsters and United Steelworkers.⁴⁰ These public protests derailed the start of a new round of trade negotiations and threatened the public legitimacy of the young WTO institution, just four years old at the time.

Despite the loud protests, an uneasy truce prevailed in the ensuing decade. While, on the surface, all three cases involved a loss for environmentalists, the jurisprudence quietly shifted. The Appellate Body’s

³⁵ See, e.g., DANIEL C. ESTY, GREENING THE GATT (1994); Steve Charnovitz, *Free Trade, Fair Trade, Green Trade: Defogging the Debate*, 27 CORNELL INT’L L.J. 459, 524–25 (1994); Aaditya Mattoo & Petros C. Mavroidis, *Trade, Environment and the WTO: The Dispute Settlement Practice Relating to Article XX of GATT*, in INTERNATIONAL TRADE LAW AND THE GATT/WTO DISPUTE SETTLEMENT SYSTEM 327 (Ernst-Ulrich Petersmann ed., 1997); Russell Norman, *GATTzilla Versus Flipper*, GREEN LEFT, Sept. 7, 1994, at 13, available at <http://www.greenleft.org.au/node/8219>.

³⁶ For example, the Earth Island Institute ran a full-page advertisement showing a sea turtle trapped in a fishing net with the headline in bold, “Why should we let a bunch of World Trade Organization bureaucrats determine the fate of our earth?” DAVID HUNTER ET AL., INTERNATIONAL ENVIRONMENTAL LAW AND POLICY 1241 (4th ed. 2011) (reproducing the advertisement).

³⁷ ELIZABETH R. DESOMBRE, DOMESTIC SOURCES OF INTERNATIONAL ENVIRONMENTAL POLICY: INDUSTRY, ENVIRONMENTALISTS, AND U.S. POWER 246 (2000).

³⁸ The Public Citizen website, for example, declares that “[h]istorically, the Venezuela Gas, Tuna-Dolphin and Shrimp-Turtle cases revealed a systemic bias in the WTO rules and the WTO dispute resolution process against the rights of sovereign states to enact and effectively enforce environmental laws.” *WTO and Environment, Health & Safety*, PUB. CITIZEN, <http://www.citizen.org/trade/wto/ENVIRONMENT> (last visited Mar. 2, 2014).

³⁹ DESOMBRE, *supra* note 37.

⁴⁰ Kit Oldham, *WTO Meeting and Protests in Seattle (1999)—Part I*, HISTORYLINK.ORG (Oct. 13, 2009), http://www.historylink.org/index.cfm?displaypage=output.cfm&file_id=9183.

approach in *Shrimp/Turtle* represented a departure from the earlier cases, opening the door for countries to regulate trade to advance environmental protection.⁴¹ Additionally, the WTO publicly took steps to affirm that trade rules are not antithetical to environmental protection.⁴² Over time, environmental groups came to realize that the threat of trade law was not as dire as they had once feared.⁴³

Though trade and environment disputes largely faded into the background after 2000, the conventional assumptions of the Classic cases have persisted.⁴⁴ Developed countries still consider themselves the leaders in advancing global environmental protection, at times resorting to tariffs and trade restrictions on imports to encourage developing countries seen as unwilling to do their share. Trade law is still suspected as favoring trade liberalization over environmental protection, limiting the ability of countries to regulate the environmental practices of their trading partners because of fears of protectionism. And GATT Article XX remains the arbiter, balancing environmental protection against trade protectionism when conflicts arise.

B. The Resurgence of Classic Assumptions in the Climate Change Debate

The Classic assumptions about trade and environment disputes have been reinforced in recent years by climate change policy debates. Those countries considering greenhouse gas reduction measures and carbon taxes have sought to ensure a level playing field with competitors who have no

⁴¹ For anyone interested in understanding the change in approach further, see, for example, Steve Charnovitz, *The WTO's Environmental Progress*, 10 J. INT'L ECON. L. 685, 695 (2007), which argues that "the generally well-thought-out Appellate Body decisions" in the Classic cases "inspired confidence in the adjudication process, and convinced many environmentalists that legitimate environmental measures would be permitted by the WTO"; Robert Howse, *The Appellate Body Rulings in the Shrimp/Turtle Case: A New Legal Baseline for the Trade and Environment Debate*, 27 COLUM. J. ENVTL. L. 491, 516 (2002), which argues that the Appellate Body's *Shrimp/Turtle* jurisprudence "swept away almost all the pillars of the GATT anti-environmentalist edifice"; and John H. Knox, *The Judicial Resolution of Conflicts Between Trade and the Environment*, 28 HARV. ENVTL. L. REV. 1, 29–42 (2004), which describes these cases as reinterpreting the GATT and leading to "the [g]reening of [t]rade [j]urisprudence."

⁴² See WORLD TRADE ORG., TRADE AND ENVIRONMENT AT THE WTO 6–7 (2004) (noting that while "the WTO is not an environmental protection agency," WTO rules "provide significant scope for Members to adopt national environmental protection policies").

⁴³ Telephone Interview with David Hunter, Professor of Law, Am. Univ. Wash. Coll. of Law & Former Exec. Dir. of the Ctr. for Int'l Envtl. Law (May 2, 2012).

⁴⁴ The *Tuna/Dolphin* debate has persisted as well, now entering its third decade of dispute, most recently over U.S. regulations governing the use of a "dolphin-safe" label on tuna cans. Again, a developing country, Mexico, challenged the legality of the pro-environmental regulation, with the WTO again ruling in its favor. In May 2012, the Appellate Body (AB) held that although dolphin protection was a legitimate objective, the U.S. regulations are discriminatory and therefore illegal. Appellate Body Report, *United States—Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Products*, ¶¶ 1–3, 342, 407–08, WT/DS381/AB/R (May 16, 2012) [hereinafter *Tuna/Dolphin* AB Report].

such policies and therefore lower production costs. In ongoing multilateral negotiations, for example, China and India have refused to adopt immediately binding commitments for greenhouse gas reductions, arguing that their developing-country status and need for economic growth rule out such measures.⁴⁵ Frustrated, developed countries are considering and, in some cases, adopting unilateral measures to encourage carbon-reducing behavior by trading partners. The U.S. Congress convened hearings to examine what types of border restrictions could be adopted in conformity with WTO law,⁴⁶ while the European Commission also held public consultations over its proposed regulations.⁴⁷ Again, the same message is being delivered as in the Classic cases: if you want access to our markets for your products and services, then you need to take action or be subject to border measures.

This time, the main tool has been a carbon emissions trading scheme (otherwise known as “cap and trade”). In the United States, such programs featured prominently in the failed 2009 Waxman–Markey bill.⁴⁸ The legislation adopted by the House of Representatives contained a section requiring importers to purchase greenhouse gas allowances if the exporting country did not have a similar greenhouse gas reduction program in place.⁴⁹

Since 2005, the EU has implemented the Emissions Trading System (ETS). Each year, the European Commission establishes a “cap” on the total amount of carbon emissions allowed in a given industry and then apportions a finite number of tradeable emission allowances to companies within that industry.⁵⁰

⁴⁵ John M. Broder, *At Climate Talks, a Familiar Standoff Between U.S. and China*, N.Y. TIMES, Dec. 8, 2011, at A18; *India Did Not Pledge to Legally Binding Commitments on Emissions: Government*, JAGRAN POST (Dec. 17, 2011, 12:29 AM), <http://post.jagran.com/india-did-not-pledge-to-legally-binding-commitments-on-emissions-government-1324061976>.

⁴⁶ *Hearing on Trade Aspects of Climate Change Legislation: Hearing Before the Subcomm. on Trade of the H. Comm. on Ways & Means*, 111th Cong. 8, 42, 50–52, 77, 81 (2009).

⁴⁷ For a list of public consultations that the European Commission held, including several concerning its ETS scheme, see *Closed Consultations*, EUR. COMMISSION, http://ec.europa.eu/environment/consultations_en.htm#closed (last updated Dec. 20, 2013).

⁴⁸ American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. §§ 701, 703 [hereinafter Waxman–Markey]. See also the Regional Greenhouse Gas Initiative (RGGI), a cap-and-trade initiative to reduce carbon dioxide emissions from the power sector by 10% in Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. *Memorandum of Understanding*, REGIONAL GREENHOUSE GAS INITIATIVE, <http://www.rggi.org/design/history/mou> (last visited Mar. 2, 2014).

⁴⁹ Waxman–Markey, *supra* note 48, § 722.

⁵⁰ At the end of the year, a company has to surrender enough allowances to cover its emissions or face heavy fines. Council Directive 2009/29, arts. 14, 16, 2009 O.J. (L 140) (EC); Council Directive 2003/87, arts. 11, 14, 16, 2003 O.J. (L 275) (EC); *Questions and Answers on the Revised EU Emissions Trading System*, EUR. COMMISSION, http://ec.europa.eu/clima/policies/ets/faq_en.htm (last updated Dec. 17, 2008).

In 2008, the European Parliament decided to extend the ETS to airlines' greenhouse gas emissions for flights into Europe beginning in 2012, requiring allowances for the carbon emitted during the entire flight, not simply over European airspace.⁵¹ Worried that the scheme would disadvantage European airlines, the EU extended it to include foreign airlines. Although the scheme involves emission allowances rather than a direct import ban or tariff, its spirit is similar to that of the border measures at issue in the earlier Classic disputes. The EU is leveraging its market power to compel behavioral change beyond its borders. If an airline wishes to fly into European airspace, then it must reduce its carbon emissions or incur a cost (through purchase of additional emissions allowances or payment of a fine to the Commission for exceeding its allowances).

The EU's trading partners responded with virulent protests. Developing countries led the charge. India threatened to ban EU airlines from Indian airspace as retaliation, with the country's Aviation Minister warning, "Travelling is always a two-way traffic If they can impose sanctions so can other countries."⁵² China's state-run press similarly issued blunt warnings that developed countries should not risk a trade war over "a trade barrier in the name of environmental protection."⁵³ Already, China has ordered its airlines not to pay the emissions tax,⁵⁴ with other countries following suit.⁵⁵ Russia convened a meeting of opposing countries to consider eleven potential retaliatory measures against the EU.⁵⁶ Together, they have persuaded more than twenty countries—including developed countries like the U.S. and Japan—to declare their opposition.⁵⁷ In November 2012, the EU retreated, suspending the policy for a year.⁵⁸

⁵¹ Council Directive 2008/101, art. I, 2009 O.J. (L 8) (EC).

⁵² Chetan Chauhan, *India Gets Support of Basic Countries Against EU's Carbon Tax*, HINDUSTAN TIMES (Feb. 14, 2012, 9:20 PM), <http://www.hindustantimes.com/India-news/NewDelhi/India-gets-support-of-Basic-countries-against-EU-s-carbon-tax/Article1-811467.aspx>; James Fontanella-Khan et al., *India Warns EU over Airline Carbon Tax*, FIN. TIMES (May 24, 2012, 7:12 PM), <http://www.ft.com/intl/cms/s/0/aceffc00-a58d-11e1-a77b-00144feabdc0.html> (quoting Civil Aviation Minister Ajit Singh).

⁵³ Simon Rabinovitch, *China Warns EU of Carbon Tax 'Trade War,'* FIN. TIMES (Dec. 22, 2011, 12:12 PM), <http://www.ft.com/intl/cms/s/0/49ab64c8-2c92-11e1-aaf5-00144feabdc0.html#axzz2fpDfx2TM>.

⁵⁴ Joshua Chaffin, *China Creates Aviation Turbulence*, FIN. TIMES (U.S. ed.), Feb. 7, 2012, at 5; Joe McDonald, *China Bars Its Airlines from Paying EU Carbon Tax*, ASSOCIATED PRESS, Feb. 6, 2012.

⁵⁵ For example, legislation was introduced in the U.S. Congress exempting U.S. airlines from paying the tax. See John Crawley, *Congress to Oppose EU Law on Aircraft Emissions*, REUTERS, Jan. 31, 2012, available at <http://www.reuters.com/article/2012/02/01/us-usa-airlines-eu-idUSTRE81003Y20120201>.

⁵⁶ Pilita Clark, *Alliance Fights EU Carbon Tax on Airlines*, FIN. TIMES (U.S. ed.), Feb. 18, 2012, at 3.

⁵⁷ Joint Declaration of the Moscow Meeting on Inclusion of International Civil Aviation in the EU-ETS, Feb. 22, 2012, http://www.greenaironline.com/photos/Moscow_Declaration.pdf.

⁵⁸ Joshua Chaffin & Andrew Parker, *Brussels Freezes Airline Carbon Charge*, FIN. TIMES (U.S. ed.), Nov. 13, 2012, at 2.

As with the earlier Classic cases, developed countries are employing unilateral measures to encourage more environmentally friendly behavior in exchange for market access. These measures to address global environmental problems are denounced by trading partners as illegal under international trade law.⁵⁹ The Classic form of a trade and environment dispute, and the assumptions that follow from them, remain alive and well. The problem, though, is that Classic disputes are no longer the only, or even the most important, game in town.

II. THE RISE OF GREEN INDUSTRIAL POLICY

As both the European aviation dispute and the latest chapter of the *Tuna/Dolphin* case⁶⁰ make clear, the Classic form of trade and environment disputes continues to remain relevant. But we contend that this dominant narrative has become outdated. Another strand of conflicts has emerged in the past five years—the aggressive promotion by both developing and developed countries of industrial policies with environmental benefits and protectionist results. This development lies at the heart of what we call the Next Generation of trade and environment disputes. Since 2008, green industrial policies have already given rise to twelve significant trade and environment conflicts.⁶¹

As we shall discuss, the Next Generation cases give rise to profoundly different legal and policy implications than the Classic cases. Countries, along with environmental groups, face an uncomfortable choice: should they be willing to sacrifice certain free trade principles in exchange for increased environmental action? Or should such principles prevail even if they slow efforts to tackle environmental problems? Part II discusses the causes underlying the rise of green industrial policies, the tactics employed in such policies, and the trade conflicts they have spawned.

A. *Why Have Green Industrial Policies Emerged?*

Industrial policy, as Dani Rodrik proclaimed in 2010, is back.⁶² Out of favor for many years in the shadow of “free market” acolytes, industrial policy is the principle that governments should actively and intentionally intervene to encourage the development of key domestic manufacturing

⁵⁹ For a discussion of trade-related concerns, see, for example, LORAND BARTELS, *THE INCLUSION OF AVIATION IN THE EU ETS: WTO LAW CONSIDERATIONS* 8–27 (Int’l Ctr. for Trade & Sustainable Dev. Issue Paper No. 6, 2012); Joshua Meltzer, *Climate Change and Trade—The EU Aviation Directive and the WTO*, 15 J. INT’L ECON. L. 111, 123–56 (2012). Note that although the dispute shares the attributes of a Classic case, the underlying treaty (i.e., the General Agreement on Trade in Services (GATS)) is different because the dispute concerns a service rather than a good.

⁶⁰ See *Tuna/Dolphin* AB Report, *supra* note 44.

⁶¹ See *infra* Part II.C.

⁶² Dani Rodrik, *The Return of Industrial Policy*, PROJECT SYNDICATE (Apr. 12, 2010), <http://www.project-syndicate.org/commentary/the-return-of-industrial-policy>.

sectors. The use of industrial policy is, of course, not new. But most recently, it has taken on a decidedly “green” tinge. Governments are applying industrial policy strategies in renewable energy and extractive resource industries. As a result, the industrial policy issues that played out in earlier trade conflicts in semiconductors and automobiles are now working their way into trade and environment disputes.

The primary factors driving the fusion of environmental and industrial policy domains have been political economy pressures, technological change, and concerns over energy security. Thanks to decades of research, technological advances have lowered the cost of renewable energy sources and made their adoption less cost prohibitive.⁶³ At the same time, governments are finding it harder to justify spending to support renewable energy policies on environmental grounds alone. In an era of rising fiscal austerity, the question of “what’s in it for us” takes on greater political salience in every debate over public spending.

To justify spending on environmental policies, governments increasingly need to ensure some payoff for their constituencies. In order to gain public support, governments are embedding spending on renewable energy projects within an overarching industrial policy designed to create high-paying “green-collar” jobs.⁶⁴ In addition, governments are emphasizing the fact that such programs are good for national security because they reduce dependence on foreign sources of energy.⁶⁵ This too raises the importance of ensuring that the manufacturing to support the renewable energy sector remains local.

For developing economies, such as China and India, an industrial policy targeting renewable energy carries an additional benefit—the opportunity to move up the value chain and gain market leadership in emerging manufacturing sectors.⁶⁶ Of the seven strategic industries targeted in China’s Twelfth Five-Year Plan (FYP), three involve renewable

⁶³ Felix Mormann & Dan Reicher, Op-Ed., *How to Make Renewable Energy Competitive*, N.Y. TIMES (June 1, 2012), <http://www.nytimes.com/2012/06/02/opinion/how-to-make-renewable-energy-competitive.html?pagewanted=all>.

⁶⁴ See, e.g., The Right Honourable David Cameron, Speech at the Sustainable Consumption Institute Conference: The Green Consumer Revolution (Oct. 16, 2009) (noting “the importance of individual governments showing leadership” and emphasizing the creation of 70,000 jobs while advancing environmental goals).

⁶⁵ Claudette Roulo, *Clean Energy Tied to National Security, Official Says*, DEFENSE.GOV (Feb. 7, 2013), <http://www.defense.gov/news/newsarticle.aspx?id=119237> (noting the Assistant Secretary of Defense for Operational Energy Plans and Programs’ remarks “that the motivation for seeking out clean energy sources is strongly rooted in national security interests”).

⁶⁶ China, for example, has adopted an automobile-emissions standard that is stricter than the United States’. This may stem from concerns over local pollution or, additionally, be the result of an export strategy for domestically manufactured vehicles that can be sold directly on the European market and satisfy their stringent emissions requirements. David Green, *Experts Say Beijing’s New Auto Emissions Standards to Ripple Through China*, WARDAUTO (Feb. 21, 2013), <http://wardsauto.com/asia-pacific/experts-say-beijing-s-new-auto-emissions-standards-ripple-through-china>.

energy.⁶⁷ India's Eleventh FYP included a comprehensive program to bolster capabilities in solar, wind, biomass, hydropower, and energy storage.⁶⁸ Recently, India's Planning Commission announced that spending targeted at renewable energy would further increase in the Twelfth FYP.⁶⁹

While, at least temporarily, the words "industrial policy" and "renewable energy" may trigger negative associations in the American public's mind after the Solyndra fiasco, within academic and policy circles, resistance to industrial policy is eroding.⁷⁰ There is a growing recognition that industrial policy, when executed well under certain circumstances, can be effective.⁷¹ Germany's success to date in creating renewable sector jobs and manufacturing leadership through an active industrial policy, in particular, has attracted much attention from others intent on replicating the recipe for its success.⁷² Governments worldwide are keen to grow their economies while implementing green policies—even if it requires their active intervention.

B. *How Is Green Industrial Policy Being Deployed?*

No one-size-fits-all formula exists for sparking the growth of key strategic industries. The strategies vary, depending on the sector and actors involved, but they draw on a basic set of policy tools. In this section, we set out the major instruments applied in green industrial policies—some

⁶⁷ These are: (1) the "[e]nergy conservation and environmental protection industries," (2) "new energy" industries (e.g., wind, solar, biomass, etc.), and (3) "new-energy" automobiles. THE TWELFTH FIVE-YEAR PLAN FOR NATIONAL ECONOMIC AND SOCIAL DEVELOPMENT OF THE PEOPLE'S REPUBLIC OF CHINA (2011–2015) pt. III, ch. 10 (English Section of the Cent. Document Translation Dep't of the Cent. Compilation & Translation Bureau trans., 2011).

⁶⁸ GOV'T OF INDIA, MINISTRY OF NEW & RENEWABLE ENERGY, REPORT OF THE WORKING GROUP ON NEW AND RENEWABLE ENERGY FOR THE XITH FIVE YEAR PLAN (2007–12) (2006).

⁶⁹ *Increasing Productivity Is Aim of 12th Plan: Srivastava*, TIMES INDIA (Dec. 8, 2012, 10:58 PM), http://articles.timesofindia.indiatimes.com/2012-12-08/guwahati/35688793_1_12th-plan-renewable-energy-productivity.

⁷⁰ Solyndra is an American solar panel manufacturer. The company received over \$500 million in loan guarantees from the U.S. Department of Energy before filing for bankruptcy in 2011. It has been held out by some as an example of why the government should not support start-up renewable energy companies. See Ronald D. White, *Solar Firm to Cease Operations*, L.A. TIMES, Sept. 1, 2011, at B2.

⁷¹ See, e.g., Ann Harrison & Andrés Rodríguez-Clare, *Trade, Foreign Investment, and Industrial Policy for Developing Countries*, in 5 HANDBOOK OF DEVELOPMENT ECONOMICS 4039 (Dani Rodrik & Mark R. Rosenzweig eds., 2010). The World Bank's former chief economist has himself endorsed industrial policy as playing a key role in transforming economies, but noted that such efforts must be properly aligned with a country's resource base and factor endowments. Justin Yifu Lin, *Industrial Policy Comes Out of the Cold*, PROJECT SYNDICATE (Dec. 1, 2010), <http://www.project-syndicate.org/commentary/industrial-policy-comes-out-of-the-cold>. For an endorsement specific toward addressing environmental issues, see Philippe Aghion et al., *The Environment and Directed Technical Change* (GRASP Working Paper No. 21, 2011).

⁷² See, e.g., Priya Barua et al., *Delivering on the Clean Energy Economy: The Role of Policy in Developing Successful Domestic Solar and Wind Industries* (World Res. Inst. Working Paper, 2012), available at http://pdf.wri.org/delivering_clean_energy_economy.pdf.

targeting nascent renewable energy sectors directly, others drawing on quasi-environmental policies to advantage key high-tech industries. We also explore the constraints imposed by WTO law on each particular form of industrial policy.

1. Sector-Targeted Subsidies.—The most common, and blunt, form of industrial policy is a general subsidy provided to the targeted sector. For green industrial policy, three types of targeted subsidies are common. The first is general research and development subsidies to firms, universities, and other institutions engaged in renewable energy research. The second is financial subsidies, such as low-interest or guaranteed loans, equity infusions, and tax credits, given directly to firms. The third is feed-in-tariff (FIT) programs. A FIT refers generally to a series of policies taken to provide a long-term financial incentive for generation of renewable energy. For example, one version of a FIT is to provide a guaranteed price for renewable energy supplied to the grid through a long-term contract; the price is almost always higher than the prevailing market price for energy supplied from nonrenewable sources. This guarantee helps to offset the higher costs faced by renewable energy producers. By eliminating this cost disadvantage, the hope is that a FIT will spur greater investment and innovation in renewable energy.⁷³

Green energy subsidies have grown rapidly in recent years, from \$39 billion in 2007 to \$66 billion in 2010.⁷⁴ The International Energy Agency (IEA) projects them to grow to almost \$250 billion by 2035.⁷⁵ More than half of the world's renewable energy subsidies are supplied by EU countries, with the EU and the United States collectively accounting for 80% of all renewable energy subsidies in 2010.⁷⁶ Other countries actively deploying major subsidies for renewable energy industries include Japan, Canada, and South Korea.⁷⁷ Additionally, over sixty-five countries employ a FIT for renewable energy.⁷⁸ These include several EU member states, Canada, Japan, Australia, Israel, and numerous U.S. states.⁷⁹ Overall, the FIT approaches taken by European countries have been among the most

⁷³ For a short overview, see, e.g., JULIE TAYLOR, FEED-IN TARIFFS (FIT): FREQUENTLY ASKED QUESTIONS FOR STATE UTILITY COMMISSIONS (2010). For a more extensive discussion of the design and financing of feed-in-tariff programs, see WILSON RICKERSON ET AL., UNITED NATIONS ENV'T PROGRAMME, FEED-IN-TARIFFS AS A POLICY INSTRUMENT FOR PROMOTING RENEWABLE ENERGIES AND GREEN ECONOMIES IN DEVELOPING COUNTRIES (2012).

⁷⁴ INT'L ENERGY AGENCY, WORLD ENERGY OUTLOOK 2011, at 508, 530 (2011).

⁷⁵ *Id.* at 530–31.

⁷⁶ *Id.* at 530.

⁷⁷ See PEW CHARITABLE TRUSTS, GLOBAL CLEAN POWER: A \$2.3 TRILLION OPPORTUNITY 46, 60, 68 (2010).

⁷⁸ REN21, RENEWABLES 2012 GLOBAL STATUS REPORT 14 (2012).

⁷⁹ *Id.* at 14, 118 tbl.R12.

varied and effective.⁸⁰ Germany's program, in particular, has attracted much positive attention, transforming Germany into an export leader for environmental goods.⁸¹

While the bulk of subsidies are provided by advanced economies, China and India are also significant players. China's Golden Sun program subsidizes up to 70% of the installation cost for off-grid solar and up to 50% of the installation, transmission, and distribution costs of a grid-connected solar array.⁸² Initiated in 2009, the program covers almost 300 solar projects worth nearly \$3 billion.⁸³ In addition, China provides subsidies through FIT programs for wind energy and biomass electricity.⁸⁴ In 2011, India announced that it had provided \$51 million in subsidies, up 63% from the previous year.⁸⁵ India's FIT programs subsidize solar, biomass-electricity, hydropower, and wind energy projects.⁸⁶ According to IEA projections, China will be the third largest provider of renewable energy subsidies by 2015, and India will be the fourth largest by 2025, if not sooner.⁸⁷ Collectively, they will account for at least 20% of global subsidies.⁸⁸

Undoubtedly, subsidy programs have played a key role in spurring the growth of renewable energy industries, with positive benefits spilling over beyond national borders. The diminishing cost of solar and wind power worldwide is due, in part, to aggressive Chinese subsidies that have triggered a supply glut and price war.⁸⁹ Consumers around the globe are enjoying cheaper clean energy, often thanks to industrial policies elsewhere.⁹⁰

⁸⁰ See, e.g., ARNE KLEIN ET AL., EVALUATION OF DIFFERENT FEED-IN TARIFF DESIGN OPTIONS—BEST PRACTICE PAPER FOR THE INTERNATIONAL FEED-IN COOPERATION (3d ed. 2010).

⁸¹ Mark Landler, *Solar Valley Rises in an Overcast Land*, N.Y. TIMES, May 16, 2008, at C1. For more details, see FED. MINISTRY FOR THE ENV'T, NATURE CONSERVATION & NUCLEAR SAFETY, REPORT ON THE ENVIRONMENTAL ECONOMY 2011, at 17–19 (Peter Franz et al. eds., 2011).

⁸² Eric Martinot & Li Junfeng, *Renewable Energy Policy Update for China*, RENEWABLEENERGYWORLD.COM (July 21, 2010), <http://www.renewableenergyworld.com/rea/news/print/article/2010/07/renewable-energy-policy-update-for-china>.

⁸³ Uclia Wang, *Here Comes China's \$3B, 'Golden Sun' Projects*, GREENTECH SOLAR (Nov. 16, 2009), <http://www.greentechmedia.com/articles/read/here-comes-chinas-3b-golden-sun-projects>.

⁸⁴ See Martinot & Junfeng, *supra* note 82.

⁸⁵ *Clean Energy Subsidies Swell in India*, CLIMATE GROUP (Sept. 5, 2011), <http://www.theclimategroup.org/what-we-do/news-and-blogs/clean-energy-subsidies-swell-in-india/>.

⁸⁶ Central Electricity Regulatory Commission (Terms and Conditions for Tariff Determination from Renewable Energy Sources) Regulations, 2009, Gazette of India, section III(4), at 50–51 (Sept. 16, 2009).

⁸⁷ INT'L ENERGY AGENCY, *supra* note 74, at 531 fig. 1413.

⁸⁸ *Id.*

⁸⁹ Keith Bradsher, *Strategy of Solar Dominance Now Poses a Threat to China*, N.Y. TIMES, Oct. 5, 2012, at B1.

⁹⁰ Christopher Martin, *U.S. Solar Projects Rose 67 Percent in Fourth Quarter, SEIA Says*, BLOOMBERG (Feb. 14, 2012, 3:52 PM), <http://www.bloomberg.com/news/2012-02-14/u-s-solar->

While some form of government intervention may be necessary in the face of market failure, in practice, subsidy policies can reflect rent seeking by domestic industries. As a result, WTO rules place constraints on the use of subsidies, but do not ban them outright. The rules governing subsidies are set out in a separate agreement, outside of the GATT, known as the Agreement on Subsidies and Countervailing Measures (SCM Agreement).⁹¹ The SCM Agreement only disciplines subsidies that specifically target certain enterprises or apply specific criteria.⁹² If such subsidies are contingent upon export performance or local-content requirements, they are impermissible.⁹³ Otherwise, they fall into the broad category of “actionable” subsidies in WTO parlance.

These “actionable” subsidies are permissible under WTO law so long as they do not negatively harm the trade interests of other countries. A government may petition to declare another government’s subsidy illegal if it can demonstrate that the subsidy has “adverse effects to the interests of other [WTO] Members.”⁹⁴ It may also take unilateral actions in domestic administrative courts against another government’s subsidy if it finds that “the effect of the [actionable subsidy] is such as to cause or threaten material injury to an established domestic industry, or is such as to prevent or materially retard the establishment of a domestic industry.”⁹⁵

In addition, subsidies may enable a producer to sell at a lower price than would otherwise be the case. WTO law also includes the possibility

projects-rose-67-percent-in-fourth-quarter-seia-says.html; Ian Steadman, *European Solar Power Capacity Keeps Increasing Despite Subsidy Cuts*, WIRED UK (Sept. 25, 2012), <http://www.wired.co.uk/news/archive/2012-09/25/solar-power-austria-europe>.

⁹¹ Agreement on Subsidies and Countervailing Measures art. 1, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1869 U.N.T.S. 14 [hereinafter SCM Agreement]. A subsidy is defined under WTO law as “a financial contribution by a government or any public body” that confers a “benefit.” *Id.* art. 1.1. The term “financial contribution” encompasses most forms of what are typically considered to be subsidies, such as grants, loans, equity infusions, tax credits, loan guarantees, etc. Four specific categories of “financial contribution” are elaborated upon in Article 1.1(a)(1)(i)–(iv) of the SCM Agreement. Any such financial contribution confers a “benefit” whenever it is given “on terms more favourable than those available to the recipient in the market.” Appellate Body Report, *Canada—Measures Affecting the Export of Civilian Aircraft*, ¶ 157, WT/DS70/AB/R (Aug. 2, 1999). In addition, case law has clarified that the term “public body” covers any “entity that possesses, exercises or is vested with governmental authority.” Appellate Body Report, *United States—Definitive Anti-Dumping and Countervailing Duties on Certain Products from China*, ¶ 317, WT/DS379/AB/R (Mar. 11, 2011).

⁹² The SCM Agreement explicitly states that its rules only apply to subsidies that are “specific.” Three types of subsidies are automatically deemed specific: export subsidies, local-content subsidies, and subsidies “limited to certain enterprises located within a designated geographical region within the jurisdiction of the granting authority.” *See* SCM Agreement, *supra* note 91, arts. 1.2, 2.2–2.3 & 3. The criteria for considering specificity of other forms of subsidies outside of these three types are spelled out in Article 2.1 of the SCM Agreement. *See id.* art. 2.1.

⁹³ *See id.* art. 3.

⁹⁴ *Id.* art. 5. Three examples of “adverse effects” are spelled out in the SCM Agreement. *See id.*

⁹⁵ GATT, *supra* note 12, art. VI:5.

for unilateral action in domestic administrative courts when the price is so low that the exporter is considered to be “dumping” its product into a market.⁹⁶ Again, a petitioner must demonstrate that the dumped goods “cause or threaten material injury.”⁹⁷ Petitions seeking relief from actionable subsidies and dumping may be filed simultaneously.

These avenues for litigation, as we shall see, have opened the door to several trade remedies cases filed against producers subsidized through green industrial policies. What began as a trade spat over green subsidies between the United States and China spilled over in 2012 to encompass a much wider range of countries, including the EU, India, South Korea, Taiwan, Malaysia, and Vietnam.⁹⁸

2. *Conditional Local-Content Subsidies and Policies.*—A second instrument that has featured prominently in green industrial policy is the local-content subsidy, defined under WTO law as a subsidy “contingent . . . upon the use of domestic over imported goods.”⁹⁹ In the green industrial policy context, the subsidy may take the form of a rebate to consumers of renewable energy products, a guaranteed purchase price to suppliers of renewable energy, and/or a preferential loan or grants to renewable energy producers. Receipt of this subsidy is conditioned on the use of a certain percentage of local, rather than foreign, products or inputs.¹⁰⁰

Local-content requirements are popular with industrial policymakers because they impart significant direct and indirect benefits. First, they boost demand for domestically produced goods, even if the domestic good is inferior in quality to a foreign import. So long as the cost of the marginal difference is less than the size of the subsidy, a rational buyer will choose the domestic good, with resulting gains in employment. Depending on the size of the demand distortion, it even may allow the domestic industry to achieve certain benefits of scale. It can also increase local capacity gained by learning through doing that boosts the competitiveness of domestic firms.

Second, the local-content subsidy may induce upstream foreign producers to establish production facilities *inside* the country in order for their products to count toward the local-content requirement. So long as the expected marginal cost of the foreign facilities and training the new work force is less than the expected marginal gain, such a shift in the foreign firm’s production location makes rational sense. Increased foreign

⁹⁶ *Id.* art. VI.

⁹⁷ *Id.*

⁹⁸ See *infra* notes 219–22 and accompanying text.

⁹⁹ SCM Agreement, *supra* note 91, art. 3.1(b).

¹⁰⁰ For a more detailed discussion of local-content requirements as applied to renewable energy sectors, see JAN-CHRISTOPH KUNTZE & TOM MOERENHOUT, INT’L CTR. FOR TRADE & SUSTAINABLE DEV., LOCAL CONTENT REQUIREMENTS AND THE RENEWABLE ENERGY INDUSTRY—A GOOD MATCH? (2013).

investment creates even more local “green collar” jobs. It may also induce technology transfer through formal or informal channels.¹⁰¹ Finally, it may lead to the diffusion of certain nontechnological, sector-specific expertise (e.g., forecasting or supply chain management skills) that will boost the competitiveness of local firms.

However, such subsidies are clearly trade distortive. They induce substitution away from otherwise more efficient imports toward less efficient domestic goods. As a result, they are one of two forms of subsidies banned outright under the SCM Agreement.¹⁰² Beyond subsidies, policies that generally require the use of a fixed volume or percentage of local content are also prohibited outright under WTO law.¹⁰³ Thus, even if the program does not meet the legal requirement for a subsidy, it is still likely impermissible.¹⁰⁴

Despite local-content requirements being illegal per se, they have featured prominently in renewable energy policies worldwide. They have found favor with a wide range of governments in both developing—and perhaps more surprisingly—developed countries. Governments offering benefits for use of locally produced goods in their renewable energy programs include Brazil, China, Croatia, France, Greece, India, Italy, Spain, Turkey, Ukraine, and several U.S. states and Canadian provinces.¹⁰⁵ Below, we describe a few of these programs in greater detail.

The earliest program to attract a trade challenge was a FIT scheme implemented by Ontario. Having campaigned on a platform of a “Greener Ontario,” the ruling Liberal Party implemented a FIT to spur renewable energy investment.¹⁰⁶ However, the program came with a catch. To qualify for the FIT, after 2011, a solar energy producer must source at least 60% of its components from Ontario, while for large-scale wind energy producers, the threshold is 50%.¹⁰⁷

¹⁰¹ An example of a formal channel is if the foreign producer decides to enter the market through a joint venture arrangement, in which its technology is then shared with the joint venture partner. An example of an informal channel is through the diffusion of technological expertise by ex-employees of the foreign investor who acquire familiarity with the technology during the course of their employment.

¹⁰² SCM Agreement, *supra* note 91, art. 3.

¹⁰³ See GATT, *supra* note 12, art. III.3.

¹⁰⁴ We note this because a contentious issue in the *Canada-Renewable Energy* case is whether the FIT amounts to a subsidy.

¹⁰⁵ For a comprehensive discussion of such policies, see KUNTZE & MOERENHOUT, *supra* note 100, at 13–30; Heymi Bahar et al., *Domestic Incentive Measures for Renewable Energy with Possible Trade Implications* (OECD Trade & Env’t Working Papers No. 2013/01, 2013).

¹⁰⁶ ONTARIO LIBERALS, MOVING FORWARD, TOGETHER: THE ONTARIO LIBERAL PLAN, 2007 HIGHLIGHTS 1, 5 (2007).

¹⁰⁷ The minimum amount of Ontario-sourced content varies depending on a number of factors, including the renewable energy source (solar vs. wind), the scale of the project, and the year in which commercial operations begin. An exception is made for wind-power projects with a contract capacity under 10kW. See Ontario Power Authority, Feed-In-Tariff Program FIT Rules Version 1.5.1 (July 15, 2011), at 16. Small-scale solar projects are subject to their own requirements.

The Liberals sought to spur job creation through pro-environmental policies designed to catapult Ontario to the forefront of clean technology manufacturing in North America.¹⁰⁸ By that measure, the local-content requirements have been successful. In the first year alone, ten solar energy manufacturers and several wind energy and solar inverter companies “committed to set[] up solar module assembly plants in Ontario to meet” the requirement.¹⁰⁹ The most visible of these is a multi-billion dollar deal with Korean manufacturer Samsung to build wind and solar energy plants in the province.¹¹⁰

India has embraced a similar strategy. Despite its promising geography and climate for solar power, India has lagged dramatically behind other countries in developing a solar panel industry. Inspired by others, in 2010 the government launched a FIT program that conditioned receipt of the subsidy on the use of Indian components.¹¹¹ The government made no secret that this was part of its industrial policy, stating that the reason for the local-content requirements was to promote domestic manufacturing in the solar energy industry to help Indian manufacturers catch up to their foreign competitors.¹¹²

¹⁰⁸ ONTARIO MINISTRY OF THE ENV'T, GO GREEN: ONTARIO'S ACTION PLAN ON CLIMATE CHANGE 14 (2007).

¹⁰⁹ Tyler Hamilton, *Energy Program a Good FIT for Ontario*, TORONTO STAR, Sept. 27, 2010, at B1.

¹¹⁰ Robert Benzie & Tyler Hamilton, *Premier to Unveil Samsung Green Deal*, TORONTO STAR, Jan. 20, 2010, at A4; *Samsung Invests \$7B in Ontario Wind & Solar*, RENEWABLEENERGYWORLD.COM (Jan. 22, 2010), <http://www.renewableenergyworld.com/rea/news/article/2010/01/samsung-invests-can-7b-in-ontario-wind-and-solar>; *Samsung, Ontario Sign \$3 Billion Wind, Solar Deal*, RENEWABLEENERGYWORLD.COM (Aug. 12, 2011), <http://www.renewableenergyworld.com/rea/news/article/2011/08/samsung-ontario-sign-3-billion-wind-solar-deal>.

¹¹¹ The exact domestic-content requirements vary over time. In order to qualify to bid for a FIT rate in the first year of Phase 1 of the program (FY 2010–2011), the solar energy supplier must use photovoltaic modules manufactured in India. JAWAHARLAL NEHRU NAT'L SOLAR MISSION, MINISTRY OF NEW & RENEWABLE ENERGY, BUILDING SOLAR INDIA: GUIDELINES FOR SELECTION OF NEW GRID CONNECTED SOLAR POWER PROJECTS BATCH-II, at 7 (2011), http://mnre.gov.in/file-manager/UserFiles/jnnsn_gridconnected_24082011.pdf. By the second year of Phase 1 (FY 2011–2012), the requirement expands to include not only Indian-manufactured photovoltaic modules, but also photovoltaic cells. *Id.* at 7–8. Government officials have already announced that in later phases, as the technological prowess of Indian manufacturers expands, they plan to expand the domestic-content requirements to include other components such as inverters, the production of which is more technology intensive. See Natalie Obiko Pearson, *India May Extend Local Equipment Usage Rule for Solar Power Beyond 2013*, BLOOMBERG (Dec. 13, 2010, 5:06 AM), <http://www.bloomberg.com/news/2010-12-13/india-may-extend-local-equipment-usage-rule-for-solar-power-beyond-2013.html>; Abhishek Shah, *Solar Energy in India—Domestic Content Requirements May Be Made More Stringent for Longer Time*, GREEN WORLD INVESTOR (Dec. 13, 2010), <http://greenworldinvestor.com/2010/12/13/solar-energy-in-india-domestic-content-requirements-may-be-made-more-stringent-for-longer-time>.

¹¹² JAWAHARLAL NEHRU NAT'L SOLAR MISSION, MINISTRY OF NEW & RENEWABLE ENERGY, TOWARDS BUILDING SOLAR INDIA 2, 7 (2010), http://www.mnre.gov.in/file-manager/UserFiles/mission_document_JNNSM.pdf.

The local-content requirement has been a boon to Indian domestic manufacturers facing a cost disadvantage relative to foreign competitors (particularly those from China).¹¹³ Without the local-content requirement for the FIT, India's solar energy producers would likely purchase imported photovoltaic modules and cells. Because the benefits from the FIT more than offset the higher cost of buying domestic, energy producers now have an incentive to buy domestic components, instead.

Some governments simply provide bonuses for local-content use, rather than making it a threshold eligibility criterion for the FIT. Italy and Greece, for example, give higher FIT rates to producers that source a given percentage of their components from within the EU.¹¹⁴ Among developing countries, Turkey and Malaysia employ a similar scheme.¹¹⁵

Nor are all local-content requirements tied to a FIT. China, for example, offered outright grants to individual wind turbine manufacturers ranging from \$6.7 million to \$22.5 million.¹¹⁶ The catch was that to qualify, a company needed to submit copies of receipts showing that they had purchased certain components made in China. Foreign companies could also qualify, but only if they shifted their component manufacturing to China. For China, the local-content requirement has been instrumental to its industrial policy's success. Its benefits include greater employment, technology transfer, and increased global market share. The program's impact is positive for the environment as well. Thanks to Chinese subsidies, wind turbines are now cheaper and therefore more widely

¹¹³ Meredith Connolly, *Mixed Reactions to India's Solar Domestic Content Requirement*, SWITCHBOARD (Jan. 9, 2012), http://switchboard.nrdc.org/blogs/mconnolly/mixed_reactions_to_indias_sola.html (noting that some domestic firms view the local-content requirement as necessary in light of foreign competition).

¹¹⁴ Nomos (2012:4062) Αξιοποίηση του πρώην Αεροδρομίου Ελληνικού–Πρόγραμμα ΗΛΙΟΣ–Προώθηση της χρήσης ενέργειας από ανανεώσιμες πηγές (Ενσωμάτωση Οδηγίας 2009/28/EK)–Κριτήρια Αειφορίας Βιοκαυσίμων και Βιορευστών (Ενσωμάτωση Οδηγίας 2009/30/EK) [Development of the Athens former international airport HELLINIKON–PROJECT HELIOS–Promotion of the use of energy from renewable sources (integration of Directive 2009/28/EC)–Sustainability criteria of biofuel and bioliquids (integration of Directive 2009/30/EC)], EPHEMERIS TES KYVERNESEOS TES HELLENIKES DEMOKRATIAS [E.K.E.D.] 2012, A:70, art. 39, para. 12 (Greece); Decreto Ministeriale 5 maggio 2011, n. 11A06083, art. 14(1)(d), in G.U. May 12, 2011, n. 109 (It.); Decreto Ministeriale 5 luglio 2012, n. 12A07629, art. 4(5)(d), in G.U. July 10, 2012, n. 159 (It.). The Italian program offers an additional premium for producers whose facilities use European-made modules and inverters. *Id.* arts. 2(1)(v) & 5(2)(a).

¹¹⁵ Paul Gipe, *Turkey Adopts Limited Feed Law*, RENEWABLEENERGYWORLD.COM (Jan. 17, 2011), <http://www.renewableenergyworld.com/rea/news/article/2011/01/turkey-adopts-limited-feed-law>; Paul Gipe, *Malaysia Adopts Sophisticated System of Feed-in Tariffs*, RENEWABLEENERGYWORLD.COM (Apr. 28, 2011), <http://www.renewableenergyworld.com/rea/news/article/2011/04/malaysia-adopts-sophisticated-system-of-feed-in-tariffs>; see also *infra* notes 147 and 149.

¹¹⁶ Sewell Chan, *U.S. Says China Fund Breaks Rules*, N.Y. TIMES, Dec. 23, 2010, at B1.

adopted.¹¹⁷ These gains, however, have come at the expense of foreign producers and foreign workers. Producers incur the cost of shifting production to China, while workers have lost their jobs outright.

Practices in certain U.S. states offer an example of yet another form of a local-content subsidy—one targeting consumers rather than producers. Five U.S. states provide direct rebates to customers who switch over to certain renewable energy technologies.¹¹⁸ Like the Italian and Greek programs, the U.S. state programs provide an additional bonus for customers using equipment manufactured in state. These range from as low as 12.5%–20% (Massachusetts, California, Ohio)¹¹⁹ to as high as 120%–240% (Washington)¹²⁰. While the overt justification for these subsidies is environmental, the goals of job creation and keeping in-state manufacturing figure prominently in justifying these public expenditures.

By lowering the cost of renewable energy production and/or consumption, each of the local-content programs provides positive environmental benefits. The problem is that each is conditioned on a trade-distortive policy designed to favor local producers over foreign imports. Not surprisingly, they have led to a series of WTO challenges, which we discuss later in the Article.

3. *Export Restrictions.*—The green industrial policies described above have been designed to boost the competitiveness of domestic renewable energy sectors. China, in particular, has implemented a third form of green industrial policy instrument with a different objective in mind. This involves placing restrictions on the export of scarce natural resources in the hopes of boosting the competitiveness of downstream domestic industries that rely on these resources as inputs. The export restrictions are enacted through a quota, a tax, or a combination of the two.

¹¹⁷ Kari Williamson, *Overcapacity and New Players Keep Wind Turbine Prices Down*, RENEWABLE ENERGY FOCUS (May 3, 2012), <http://www.renewableenergyfocus.com/view/25560/over-capacity-and-new-players-keep-wind-turbine-prices-down>.

¹¹⁸ For example, California provides rebates to customers installing one of nine types of technologies. See CTR. FOR SUSTAINABLE ENERGY CAL., SELF-GENERATION INCENTIVE PROGRAM HANDBOOK 1 (2011). New Jersey and Washington provide incentives for solar and wind energy installations, while the Massachusetts program is only for solar and Ohio's is only for wind. See Renewable Energy System Cost Recovery, WASH. ADMIN. CODE § 458-20-273 (2012); AMY GOMBERG, ENV'T OHIO, OHIO'S WIND ENERGY FUTURE (2007); MASS. CLEAN ENERGY CTR., COMMONWEALTH SOLAR II PHOTOVOLTAIC REBATE PROGRAM: PROGRAM MANUAL (2012), http://masscec.live.getfused.com/masscec/file/CSII_Solicitation_V10_Final.pdf; N.J.'S CLEAN ENERGY PROGRAM, RENEWABLE ENERGY INCENTIVE PROGRAM GUIDEBOOK 6–7 (2009), http://www.njcleanenergy.com/files/file/Renewable_Programs/CORE/REIPGuidebookfinal0202mq.pdf.

¹¹⁹ See Strickland, *Fisher Announce Wind Production and Manufacturing Incentives*, GOVERNOR TED STRICKLAND (Feb. 8, 2007), <http://www.tedstrickland.com/2-8-07-strickland-fisher-announce-wind-production-and-manufacturing-incentives>; MASS. CLEAN ENERGY CTR., *supra* note 118, at 8; CTR. FOR SUSTAINABLE ENERGY CAL., *supra* note 118, at 28–29. Note that the additional incentive in California is subject to a cap. See CTR. FOR SUSTAINABLE ENERGY CAL., *supra* note 118, at 27.

¹²⁰ See Renewable Energy System Cost Recovery, *supra* note 118, § 14(d).

Among the resources that China has restricted are a set of nine minerals and a group of “rare earth” elements.¹²¹ China has attempted to justify its restrictions, in some instances belatedly, as pro-environmental.¹²² The process of extracting and refining the elements causes ecological damage and poses grave environmental risks. For example, the extraction and processing of rare earths produces a radioactive waste product that can contaminate local water sources¹²³ and increase cancer incidences.¹²⁴ Export restrictions artificially constrain production, thereby diminishing environmental harm. As such, they are indeed environmentally beneficial.¹²⁵

The problem is that they introduce a trade-related market distortion. Only foreign consumers find themselves supply constrained and facing higher prices. Moreover, the same environmental objectives could be accomplished through a production, rather than an export, restriction, but without the negative trade impact. The latter point has raised doubts over whether environmental concerns truly motivate China’s export restriction policies.¹²⁶

Why is China resorting to export restrictions rather than production limits? To understand China’s viewpoint, consider the pattern of overall global mineral extraction. Today, China bears a disproportionate share of the world’s “dirty” mining. With only one-third of global reserves, China supplies 97% of the world’s rare earths.¹²⁷ The United States, once the world’s leading producer, shut down all production in 1998, following

¹²¹ The nine minerals at issue in the *China-Raw Materials* case on which China imposed export restraints were “bauxite, coke, fluorspar, magnesium, manganese, silicon carbide, silicon metal, yellow phosphorus and zinc.” See Panel Report, *China—Measures Related to the Exportation of Various Raw Materials*, ¶ 2.1, WT/DS394/R, WT/DS395/R, WT/DS398/R (July 5, 2011) [hereinafter *China-Raw Materials* Panel Report]. The elements at issue in the *China-Rare Earths* case include “various forms of rare earths, tungsten, and molybdenum.” See Request for Consultations by the United States, *China—Measures Related to the Exportation of Rare Earths, Tungsten and Molybdenum*, 1, WT/DS431/1 (Mar. 15, 2012) (footnotes omitted) [hereinafter *China-Rare Earths* Request for Consultations (U.S.)].

¹²² Peter Cai & Georgia Wilkins, *China Cites Environment to Justify Grip on Rare Earths*, SYDNEY MORNING HERALD, June 21, 2012, at 5.

¹²³ Lisa Margonelli, *Down and Dirty: Hybrid Cars and Wind Turbines Need Rare-Earth Minerals that Come with Their Own Hefty Environmental Price Tag*, ATLANTIC, May 2009, at 17, 17–18.

¹²⁴ See Lei Wu et al., [A Case-Control Study on the Risk Factors of Leukemia in Mining Areas of Rare-Earth in South Jiangxi] 24 ZHONGHUA LIU XING BING XUE ZA ZHI (中华流行病学杂志) [Chinese J. Epidemiology] 879, 879–82 (2003).

¹²⁵ This is assuming no production capacity constraint. In the face of such constraint, it is possible that increased domestic demand might substitute for reduced export opportunities, thereby eliminating the environmental gains.

¹²⁶ See, e.g., John W. Miller, *Protectionism Hurts Effort to Pressure China*, WALL ST. J., Nov. 9, 2010, at A15.

¹²⁷ *China Announces Second Rare Earth Export Quota for 2012*, PEOPLE’S DAILY ONLINE (Aug. 23, 2012, 8:18 AM), <http://english.peopledaily.com.cn/90778/7920534.html>; Nick Valéry, *The Difference Engine: More Precious than Gold*, ECONOMIST BABBAGE BLOG (Sept. 17, 2010, 6:22 PM), http://www.economist.com/blogs/babbage/2010/09/rare-earth_metals.

environmental outcry over a radioactive spill into a California desert.¹²⁸ The same story is true of other raw materials such as fluorspar.¹²⁹ Other than Spain, no industrialized country mines fluorspar because of the associated environmental hazards, even though both the United States and France have an ample base of reserves.¹³⁰

As China has grown wealthier and its domestic manufacturing base has expanded, its policymakers ask: Why should China aggressively mine an exhaustible natural resource—and incur the resultant environmental harm—simply to supply the world market, when the rest of the world refuses to do so?¹³¹ Why not limit the use of exhaustible natural resources to its home market, as the United States has done with liquefied natural gas?¹³²

For Chinese policymakers, a key factor in analyzing the cost–benefit equation at hand is whether the minerals are used domestically or exported. Under both scenarios, the costs are the same: upstream extraction and processing generates negative environmental externalities. However, the offsetting benefits differ greatly, at least in Chinese eyes, depending on whether the mineral is subsequently exported for use by a foreign manufacturer or kept for domestic use.

When kept in China, the downstream Chinese manufacturer later remits taxes back to the Chinese government on profits made from use of the mineral as an input. Although such taxes are not designated for environmental cleanup, they increase the central government’s fiscal capabilities to cover remediation costs. The same is not true of an overseas

¹²⁸ Mike Alberti, *Digging a Deep Hole: Rare Earths Debacle Puts U.S. Trade Policy Under Scrutiny*, REMAPPING DEBATE, Jan. 11, 2011; Katherine Bourzac, *Can the U.S. Rare-Earth Industry Rebound?*, MIT TECH. REV. (Oct. 29, 2010), <http://www.technologyreview.com/news/421472/can-the-us-rare-earth-industry-rebound> (noting that in the 1970s and 1980s, the United States produced over seventy percent of the world’s supply).

¹²⁹ Fluorspar is used to manufacture a wide range of products including “aluminum, gasoline, insulating foams, refrigerants, steel, and uranium fuel.” *Minerals Information: Fluorspar Statistics and Information*, U.S. GEOLOGICAL SURVEY, <http://minerals.usgs.gov/minerals/pubs/commodity/fluorspar>.

¹³⁰ U.S. DEP’T OF THE INTERIOR, U.S. GEOLOGICAL SURVEY, MINERAL COMMODITY SUMMARIES 2008, at 63 (2008). We use the year 2007 because this is the year prior to China’s policy shift on raw materials. See *China-Raw Materials* Panel Report, *supra* note 121, ¶ 2.4 (listing various measures that were implemented beginning in 2008 that were challenged in the subsequent WTO case).

¹³¹ David Stanway & James Regan, *Pollution the Big Barrier to Freer Trade in Rare Earths*, REUTERS, Mar. 19, 2012, *available at* <http://www.reuters.com/article/2012/03/19/us-china-rareearth-idUSBRE82I08I20120319> (noting that “Chinese officials insist [that] the country’s dominance” in rare earths trade “is no longer anything to celebrate” as it has come with a heavy environmental price).

¹³² Under the 1938 Natural Gas Act, companies must obtain an export license for liquefied natural gas. Some have suggested that the current policy which benefits U.S. domestic firms, if left unchanged, would make it difficult for the United States “to argue against China’s restrictions on exports of rare earth minerals.” See Richard McGregor & Ed Crooks, *Obama Backs Rise in US Gas Exports*, FIN. TIMES (U.S. ed.), May 6, 2013, at 1.

manufacturer who needs not remit any share of its profits to the Chinese government.

More importantly, the extracted minerals serve as key inputs for several strategic industries, such as defense, high tech, and pharmaceuticals. When kept in China, the inputs presumably increase Chinese capabilities in these sectors and generate positive spillover effects for the rest of the economy (through supply chain linkages, innovation, jobs, etc.).¹³³ For example, lanthanum extracted from Chinese mines is a key input for Chinese manufacturing of rechargeable car batteries.¹³⁴ This, in turn, has sparked the development of an electric car industry in China and innovation in hybrid technologies.

Put crudely, China's view is that so long as the mineral is consumed within its borders, the positive externalities that emerge from domestic downstream use will more than compensate for the negative externalities that result from upstream extraction.¹³⁵ Potentially environmentally harmful acts are acceptable if they trigger greater downstream benefits that will more than cover the remediation costs. However, once the mineral is exported, China fails to capture any positive downstream externalities but is left with the cost of upstream environmental harm.¹³⁶ Export restrictions, unlike overall production limits, allow China to account for this difference.¹³⁷

China's trading partners, however, suspect that the real drivers are geopolitics and industrial policy. During a territorial dispute with Japan in

¹³³ For an overview of the role played by select metals and minerals in aiding the development of key strategic industries, see Jane Korinek & Jeonghoi Kim, *Export Restrictions on Strategic Raw Materials and Their Impact on Trade and Global Supply*, 45 J. WORLD TRADE 255, 257–59 (2011).

¹³⁴ On the importance of lanthanum for hybrid car batteries, etc., see Maggie Koerth-Baker, *4 Rare Earth Elements that Will Only Get More Important*, POPULAR MECHANICS, <http://www.popularmechanics.com/technology/engineering/news/important-rare-earth-elements> (last visited Mar. 2, 2014); Stephen Kurczy, *Top 5 'Rare Earth' Minerals: What Are They?*, CHRISTIAN SCI. MONITOR (Oct. 21, 2010, 2:13 PM), <http://www.csmonitor.com/World/Asia-Pacific/2010/1021/Top-5-rare-earth-minerals-What-are-they/Lanthanum>; see also Uccilia Wang, *China Sets New Record for Renewable Energy Storage*, FORBES (Jan. 4, 2012, 11:14 AM), <http://www.forbes.com/sites/uciliawang/2012/01/04/china-sets-new-record-for-renewable-energy-storage> (describing China's ambitions to build a battery industry for renewable energy).

¹³⁵ Interview with Advisor to Chinese Government (2011-G1).

¹³⁶ An environmental input–output analysis found that the largest driver of China's increasing carbon emissions is its changing export composition, for which metal products accounted for the largest percentage increase in the proportion of export value. See Ming Xu et al., *CO₂ Emissions Embodied in China's Exports from 2002 to 2008: A Structural Decomposition Analysis*, 39 ENERGY POL'Y 7381 (2011).

¹³⁷ China is not alone in applying export restrictions on natural resources. "More than one-third of all notified export restrictions are in resource sectors," and export taxes are twice as likely in this sector as compared to other sectors. Michele Ruta & Anthony J. Venables, *International Trade in Natural Resources: Practice and Policy* 12–13 (WTO Staff Working Paper ERSD-2012-07, 2012). However, these restrictions pose special legal problems for China on account of its Protocol of Accession. See *infra* text accompanying note 143.

late 2010, for example, China cut off all exports of rare earth minerals to Japan, forcing Japan eventually to relent.¹³⁸ In addition, the export restrictions have created a pricing dynamic where foreign downstream industries pay more for raw material inputs than their Chinese competitors. Some contend that China is using the shortage of rare earth exports and raw materials as a tool to entice foreign high-tech firms to relocate their manufacturing operations to China.¹³⁹ This, in turn, would give China greater access to downstream technologies.¹⁴⁰ Finally, the higher prices for rare earth exports and raw materials provide Chinese downstream producers with a cost advantage for inputs over their foreign competitors.

WTO law places limits on the use of certain forms of export restrictions. GATT Article XI prohibits the use of export quotas and export bans, except under certain limited conditions.¹⁴¹ Because this is a GATT provision, unlike the subsidy provisions, it is subject to the balancing test of GATT Article XX exceptions. Export taxes, on the other hand, are another matter. In general, WTO members are allowed to apply “duties, taxes or other charges” on exports.¹⁴² However, Article 11.3 of China’s Protocol of Accession states that “China shall eliminate all taxes and charges applied to exports” unless certain exceptions apply.¹⁴³ These provisions have provided grounds for China’s trading partners to challenge its export restrictions at the WTO.

* * *

When one surveys the range of green industrial policy instruments that have been deployed—from taxes and subsidies to quotas and bans—four points become clear. First, the common perception that China and India are refusing to address global environmental problems¹⁴⁴ is incorrect. Their

¹³⁸ See Keith Bradsher, *In Dispute, China Blocks Rare Earth Exports to Japan*, N.Y. TIMES, Sept. 23, 2010, at B1. Days after the embargo was imposed, Japan released the captain of the Chinese fishing vessel seized in the disputed territorial waters. See Chico Harlan & William Wan, *Chinese Boat Captain Is Released*, WASH. POST, Sept. 25, 2010, at A7. The territorial issues over the disputed Senkaku/Diaoyutai islands remain unresolved.

¹³⁹ Keith Bradsher, *China Tightens Grip on Rare Minerals*, N.Y. TIMES, Sept. 1, 2009, at B1.

¹⁴⁰ Sudeep Reddy & Jared A. Favole, *Obama to Push China on Minerals*, WALL ST. J., Mar. 13, 2012, at A1 (citing a research note by Professor Scott Kennedy for an economics consulting firm that highlighted this as an objective of the Chinese government’s rare earth policy).

¹⁴¹ GATT, *supra* note 12, art. XI(1).

¹⁴² *Id.*

¹⁴³ These exceptions are if the export taxes or other charges are “specifically provided for in . . . this Protocol or applied in conformity with the provisions of Article VIII of the GATT 1994.” See Protocol on the Accession of the People’s Republic of China, art. 11.3, WT/L/432 (Nov. 23, 2001).

¹⁴⁴ See, e.g., Robert W. Hahn, *Climate Policy: Separating Fact from Fantasy*, 33 HARV. ENVTL. L. REV. 557, 571–72 (2009) (“[M]any, such as China and India, do not perceive it in their interest to sign an agreement today that would require them to take costly actions. . . . They are not willing to sacrifice growth today for the benefit of future generations”); Christine McIsaac, *Opening a GATE to*

governments are forging ahead with a wide range of pro-environmental policies, deploying hundreds of millions of dollars in support. Despite having an economy half the size of the United States, China now leads the world in renewable energy investments, spending 53% more than the second-ranked United States.¹⁴⁵

Second, they are not doing so out of altruistic concern or a sense of global responsibility. Instead, they are intentionally enacting industrial policies designed to benefit their economic competitiveness. Positive environmental gains are simply a corollary benefit. Although their governments will not articulate it this bluntly, their pragmatic message is essentially: We are willing to do our part to address the world's environmental problems. But our per capita carbon emissions are still vastly lower than those who point fingers at us for not doing our share. As developing countries, we have not been the primary contributors of environmental harm to date, nor have we enjoyed much of the economic gains derived from these impacts. To address a problem we neither caused nor benefited from, we expect to be compensated meaningfully through financial and/or technology transfer. And if industrialized countries are unwilling to do so, then we will take action only when it serves our own domestic economic interests, particularly when it strategically advantages our nascent manufacturing sectors.

Third, other developing countries are taking notice and following suit. Although we focused primarily on examples in China and India, they are far from alone: Brazil adopted a local-content requirement as part of its preferential development loan program.¹⁴⁶ In 2010, Turkey revised its renewable energy law to include a local-content premium in its FIT scheme.¹⁴⁷ Ukraine did the same in 2011.¹⁴⁸ Similarly, Malaysia's new

Reduce Global Emissions: Getting over and into the WTO, 44 J. WORLD TRADE 1053, 1072–73 (2010) (describing the “New Major Players” such as China, India, and Brazil as “free riders”); Michael P. Vanderbergh, *Climate Change: The China Problem*, 81 S. CAL. L. REV. 905, 908 (2008).

¹⁴⁵ China first overtook the United States in renewable energy investment in 2009, but relinquished its lead in 2011 on account of the United States' one-time stimulus spending that year. In 2012, China invested \$67.7 billion, compared with \$44.2 billion by the United States. See Pilita Clark, *China Heads Renewable Energy Spending*, FIN. TIMES, Jan. 15, 2013, at 17. For information about the size of each economy, see *World Economic Outlook Database: October 2012 Edition*, INT'L MONETARY FUND (Oct. 9, 2012), <http://www.imf.org/external/pubs/ft/weo/2012/02/weodata/index.aspx>.

¹⁴⁶ To qualify for a loan from Brazil's development bank, BNDES, wind turbine manufacturers are required to source initially “40% of their components from Brazilian suppliers,” with the requirement eventually increasing to 60%. ERNST & YOUNG, RENEWABLE ENERGY COUNTRY ATTRACTIVENESS INDICES 29 (2012).

¹⁴⁷ Law on Utilization of Renewable Energy Sources for the Purpose of Generating Electrical Energy, Law No. 5346, art. 6/B & sched. II (Dec. 29, 2010) (Turk.).

¹⁴⁸ Vitaliy Radchenko, *Ukraine—Change to Local Content Requirement for Renewable Energy Sector*, JD SUPRA L. NEWS (June 22, 2011), <http://www.jdsupra.com/legalnews/ukraine-change-to-local-content-require-77720>.

Renewable Energy Act, passed in 2011, includes a sophisticated schedule with bonuses for use of local components.¹⁴⁹

Finally, green industrial policies have also emerged in developed economies from Europe to North America. The policy justifications may vary, from ensuring energy security and economic competitiveness to delivering on political promises to create high-paying “green collar” jobs and, of course, environmental protection. The bottom line is that green industrial policy has gone global.

C. Green Industrial Policy and Trade Disputes

Not surprisingly, the proliferation of green industrial policy has led to a renewed outbreak of trade litigation related to environmental matters. As explained above, many, perhaps most, of the pro-environmental policies discussed above are illegal under WTO rules. In this section, we highlight the two primary forms of trade actions countries have used to challenge their trading partners’ green industrial policies. Not only are formal conflicts over Next Generation cases on the rise, but the litigation fora in which such cases are being fought are also expanding.

1. Multilateral Action: WTO Dispute Settlement.—The most obvious forum for a country to address green industrial policies that violate WTO rules is the WTO itself.¹⁵⁰ The WTO offers several benefits—it is a multilateral forum, it oversees both negotiation and judicial interpretation of international trade rules, and it offers binding dispute resolution.¹⁵¹

Several options exist within the WTO. The softest approach is for a country to express its concern during regular meetings of a WTO committee. For example, a country may raise qualms over another country’s subsidies for renewable energy industries in the Committee on Subsidies and Countervailing Measures. The United States has used this forum to call on China and India to provide additional notification for over 200 of its subsidies programs, many of which are provided through local governments and some of which have environmental implications.¹⁵² The EU, Australia, Canada, Japan, Norway, New Zealand, and Turkey joined the United States’ request.¹⁵³

¹⁴⁹ Renewable Energy Act 2011, Act 725, Schedule (Section 2) (Malay.).

¹⁵⁰ This is subject to the caveat that all parties to the dispute are WTO members.

¹⁵¹ See WORLD TRADE ORG., THE WORLD TRADE ORGANIZATION . . . IN BRIEF (2009), http://www.wto.org/english/res_e/doload_e/inbr_e.pdf.

¹⁵² See Request from the United States to India Pursuant to Article 25.10 of the Agreement, *Subsidies*, G/SCM/Q2/IND/20 (Oct. 10, 2011); Request from the United States to China Pursuant to Article 25.10 of the Agreement, *Subsidies*, G/SCM/Q2/CHN/42 (Oct. 11, 2011).

¹⁵³ See WTO Comm. on Subsidies & Countervailing Measures, *Minutes of the Regular Meeting Held on 26–27 October 2011*, ¶¶ 111–17, 120–24, G/SCM/M/79 (Feb. 2, 2012); WTO Comm. on Subsidies & Countervailing Measures, *Minutes of the Regular Meeting Held on 26 April 2012*, ¶¶ 52–56, 59–64, G/SCM/M/81 (July 25, 2012).

Another mechanism is to raise concerns during a country's Trade Policy Review. Each WTO member's trade policies are reviewed on a regular basis, and trading partners may use this review to inquire into questionable trade policies. For example, in September 2011, the United States took advantage of this mechanism to express concern that the local-content requirements of India's FIT "explicitly shut out imports," criticizing it as comparable to the "trade-restrictive policies pursued in previous, poorly-performing periods of India's economic development."¹⁵⁴ U.S. Trade Representative Ron Kirk later described India's unwillingness to come clean as "intolerable."¹⁵⁵

Finally, a country can choose to file a formal legal complaint through the WTO's dispute settlement process. This can lead to hearings before a dispute panel and the possibility of an appeal before the WTO's Appellate Body (AB). Should the panel (or ultimately the AB) find that the defendant party's policies are in fact illegal under WTO law, then that country is given "a reasonable period of time" to bring its policies into compliance with WTO obligations.¹⁵⁶ If a country does so, then no additional legal remedies are available. In particular, the dispute settlement regime at the WTO tends not to offer compensatory or punitive relief for past violations. But if a country continues to breach after the reasonable period has expired, the complainant may then impose a fixed amount of tariffs against the defendant's exports.¹⁵⁷

The past three years have witnessed a rapid growth of WTO cases concerning green industrial policy. The first such dispute, *China-Raw Materials*, was filed by the United States and EU against China in June 2009,¹⁵⁸ with Mexico later joining as an additional complainant.¹⁵⁹ The panel ruled against China's export restrictions,¹⁶⁰ and the majority of the

¹⁵⁴ Ambassador Michael Punke, U.S. Permanent Representative to the WTO, Statement at the WTO Trade Policy Review of India (Sept. 14, 2011), available at <http://www.ustr.gov/about-us/press-office/speeches/transcripts/2011/september/statement-ambassador-michael-punke-wto-tra>.

¹⁵⁵ Press Release, Office of the U.S. Trade Representative, Exec. Office of the President, United States Details China and India Subsidy Programs in Submission to WTO (Oct. 06, 2011), available at <http://www.ustr.gov/about-us/press-office/press-releases/2011/october/united-states-details-china-and-india-subsidy-prog>.

¹⁵⁶ Understanding on Rules and Procedures Governing the Settlement of Disputes art. 21, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 2, 1869 U.N.T.S. 401.

¹⁵⁷ For additional details of this institutional design, including an analysis of the implications and shortcomings, see Rachel Brewster, *The Remedy Gap: Institutional Design, Retaliation, and Trade Law Enforcement*, 80 GEO. WASH. L. REV. 102 (2011).

¹⁵⁸ Request for Consultations by the United States, *China—Measures Related to the Exportation of Various Raw Materials*, WT/DS394/1 (June 25, 2009); Request for Consultations by the European Communities, *China—Measures Related to the Exportation of Various Raw Materials*, WT/DS395/1 (June 25, 2009).

¹⁵⁹ Request for Consultations by Mexico, *China—Measures Related to the Exportation of Various Raw Materials*, WT/DS398/1 (Aug. 26, 2009).

¹⁶⁰ *China-Raw Materials* Panel Report, *supra* note 121, ¶¶ 8.16–8.22.

panel's rulings were upheld by the AB.¹⁶¹ The AB also upheld the panel's finding that China had bargained away its right to exercise the GATT Article XX exceptions to justify export taxes as part of its WTO accession.¹⁶²

The United States filed a second complaint in December 2010, challenging the legality of China's local-content requirements for subsidies for wind power equipment.¹⁶³ Interestingly, it was the United Steelworkers, a labor union, rather than American wind turbine producers, who pressured the White House to bring the *China-Wind Power Equipment* case.¹⁶⁴ They worried that the program would cost their workers jobs as American producers shifted their manufacturing to China to take advantage of the subsidy. Rather than litigate, China agreed to a settlement in which it dropped the offending program. The White House declared it a major victory for ensuring "fairness for American clean technology innovators and workers."¹⁶⁵

Third, in 2010 and 2011, Japan and the EU challenged the legality of Ontario's local-content requirement for its FIT program.¹⁶⁶ Japan expressed concern "about possible proliferation of such protectionist measures all over the world" and urged the WTO to take action.¹⁶⁷ In December 2012, the WTO panel ruled against Canada, holding that the FIT violated national treatment obligations under the GATT and the Agreement on Trade-Related Investment Measures.¹⁶⁸ The Appellate Body, in May 2013,

¹⁶¹ *China-Raw Materials* AB Report, *supra* note 13, ¶ 362.

¹⁶² *Id.* ¶¶ 279, 284–85, 362.

¹⁶³ Request for Consultations by the United States, *China—Measures Concerning Wind Power Equipment*, WT/DS419/1 (Jan. 6, 2011) [hereinafter *China-Wind Power Equipment* Request for Consultations (U.S.)].

¹⁶⁴ UNITED STEELWORKERS, EXECUTIVE SUMMARY: UNITED STEELWORKERS' SECTION 301 PETITION DEMONSTRATES CHINA'S GREEN TECHNOLOGY PRACTICES VIOLATE WTO RULES (2010), <http://assets.usw.org/releases/misc/section-301.pdf>.

¹⁶⁵ Press Release, Office of the U.S. Trade Representative, Exec. Office of the President, China Ends Wind Power Equipment Subsidies Challenged by the United States in WTO Dispute (June 7, 2011), available at <http://www.ustr.gov/about-us/press-office/press-releases/2011/june/china-ends-wind-power-equipment-subsidies-challenged> (noting also that the deal "supports well-paying jobs here at home").

¹⁶⁶ Request for Consultations by Japan, *Canada—Certain Measures Affecting the Renewable Energy Generation Sector*, WT/DS412/1 (Sept. 16, 2010); Request for Consultations by the European Union, *Canada—Measures Relating to the Feed-in Tariff Program*, WT/DS426/1 (Aug. 16, 2011).

¹⁶⁷ Press Release, Ministry of Econ., Trade & Indus., Gov't of Japan, Request for the Establishment of a Panel on Certain Measures Affecting the Renewable Energy Generation Sector in Ontario, Canada (June 1, 2011), available at http://www.meti.go.jp/english/press/2011/0601_01.html.

¹⁶⁸ *Canada-Renewable Energy* Panel Report, *supra* note 7, ¶ 7.167. However, a majority of the panel found that the FIT did not amount to a subsidy as it did not confer a benefit, while one member sharply dissented. *Id.* ¶¶ 7.320–7.328, 9.1–9.23.

reversed parts of the panel decision, but overall, allowed the panel's ruling that the measures violated national treatment obligations to stand.¹⁶⁹

Fourth, following the *China-Raw Materials* ruling, the United States, EU, and Japan each filed complaints in 2012 challenging China's export restrictions on rare earths, tungsten, and molybdenum.¹⁷⁰ In March 2014, the Panel issued a ruling against China, declaring that its export restrictions violated its WTO commitments.¹⁷¹ At the time of this writing, appeals of the Panel decision are pending before the Appellate Body.

Fifth, in November 2012, China filed a complaint challenging local-content restrictions in Europe FITs.¹⁷² The case remains at the consultation stage at the time of this writing.

Sixth, in February 2013, after months of trying to negotiate a resolution, the United States formally initiated a complaint over India's FIT program.¹⁷³ India has been shoring up its defense for some time in anticipation of a case,¹⁷⁴ and at the time of this writing, the United States, after unsuccessful consultations, has requested the establishment of a Panel.

In contrast, during the same period of 2009–2013, the WTO handled only one Classic type of trade and environment case (*U.S.-Tuna II*¹⁷⁵). Next Generation conflicts have clearly superseded Classic conflicts within the WTO. WTO litigation is no longer about environmentally contingent market access policies but, rather, green industrial policies. Given how many such policies run afoul of WTO rules, we should expect countries to turn even more to the WTO to force their trading partners to dismantle these pro-environmental, but quasi-protectionist, policies.

¹⁶⁹ Appellate Body Report, *Canada—Certain Measures Affecting the Renewable Energy Generation Sector, Canada—Measures Relating to the Feed-in Tariff Program*, ¶¶ 6.1–6.2, WT/DS412/AB/R, WT/DS426/AB/R (May 6, 2013).

¹⁷⁰ *China-Rare Earths* Request for Consultations (U.S.), *supra* note 121; Request for Consultations by the European Union, *China—Measures Related to the Exportation of Rare Earths, Tungsten and Molybdenum*, WT/DS432/1 (Mar. 15, 2012); Request for Consultations by Japan, *China—Measures Related to the Exportation of Rare Earths, Tungsten and Molybdenum*, WT/DS433/1 (Mar. 15, 2012).

¹⁷¹ Panel Report, *China—Measures Related to the Exportation of Rare Earths, Tungsten and Molybdenum*, WT/DS431/R, WT/DS432/R, WT/DS433/R (Mar. 26, 2014).

¹⁷² See *supra* note 6 and accompanying text.

¹⁷³ Request for Consultations by the United States, *India—Certain Measures Relating to Solar Cells and Solar Modules*, WT/DS456/1 (Feb. 11, 2013).

¹⁷⁴ Amiti Sen, *India Confronts US, EU at WTO over National Solar Power Generation Programme*, ECON. TIMES (Oct. 26, 2011, 4:19 AM), http://articles.economictimes.indiatimes.com/2011-10-26/news/30324230_1_solar-mission-solar-power-solar-projects; Amiti Sen, *India to Defend Local-Buy Policy in Solar Mission as US, EU Protest*, ECON. TIMES (Feb. 3, 2012, 3:21 AM), http://articles.economictimes.indiatimes.com/2012-02-03/news/31021273_1_solar-mission-trade-related-investment-measures-solar-energy.

¹⁷⁵ Panel Report, *United States—Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Products*, WT/DS381/R (Sept. 15, 2011); Appellate Body Report, *United States—Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Products*, WT/DS381/AB/R (May 16, 2012).

2. *Unilateral Action: Trade Remedies Cases.*—Multilateral action, however, carries real costs. It is time-consuming and resource intensive. In addition, the WTO dispute settlement process does not readily offer the prospect of retrospective damages.¹⁷⁶ Some countries, frustrated with trading partners' industrial policies and unwilling to wait for the WTO to proceed through its long dispute settlement process with no clear prospect of damages, are resorting to unilateral action instead.

WTO law permits a country to take unilateral action under certain circumstances. First, a domestic industry must file a case with the government petitioning for increased tariffs against its trading partner. A government may also proactively begin investigating a case *ex officio*. This case is then adjudicated through a domestic administrative proceeding. Provided certain conditions are met, a country may then impose unilateral tariffs against goods from its trading partner found to be in violation. Collectively, such actions are known as trade remedies.¹⁷⁷

Two forms—the countervailing duty (CVD) and the antidumping duty—are particularly important in this context.¹⁷⁸ A CVD case may be filed against producers benefiting from a subsidy, while an antidumping case may be filed against any producer “dumping” a good onto a market. That is, both CVD and antidumping complaints are lodged against foreign companies directly, rather than against the foreign governments.

Dumping is defined as pricing below the “normal value” of a product;¹⁷⁹ thus, antidumping cases, at least in theory, target foreign firms that “dump” their products below market rates, ostensibly to take over the domestic market. CVD cases aim to stem the effects of impermissible subsidization. In both instances, the effect of the subsidy or dumping must be to cause or threaten “material injury to an established industry” or to “materially retard[] the establishment of a domestic industry.”¹⁸⁰ If this can be proven, a unilateral tariff may be imposed to offset the negative impact of the subsidy or “dumping.”¹⁸¹ This tariff may be kept in place indefinitely, but must be reviewed every five years.¹⁸²

¹⁷⁶ The vast majority of cases impose prospective remedies that commence from the expiry of the “reasonable period of time.” A few cases from the GATT era deviate from this practice. For a more complete discussion, see PETROS C. MAVROIDIS ET AL., *THE LAW OF THE WORLD TRADE ORGANIZATION* (WTO) 1084 (2010).

¹⁷⁷ Besides increased tariffs, a trade remedy may also take the form of a quantitative restriction if imposed as a safeguard. See GATT, *supra* note 12, art. XIX.

¹⁷⁸ A third form is a safeguard, but because the standards for obtaining relief under WTO safeguard provisions are more difficult to satisfy, it is not frequently used as a trade remedy. See Chad P. Bown, *Why Are Safeguards Under the WTO So Unpopular?*, 1 *WORLD TRADE REV.* 47 (2002).

¹⁷⁹ GATT, *supra* note 12, art. VI:1.

¹⁸⁰ *Id.* art. VI:1 & VI:6(a).

¹⁸¹ *Id.* art. VI:2 & VI:3.

¹⁸² SCM Agreement, *supra* note 91, art. 21.3.

The use of unilateral tariffs to challenge green industrial policy is a recent development but seems likely to become increasingly common. On October 19, 2011, SolarWorld Industries America Inc., the American subsidiary of a German solar panel manufacturer, filed a petition seeking antidumping and countervailing duties against Chinese manufacturers of solar panels. SolarWorld's petition was supported by six other American solar panel manufacturers who chose to remain anonymous (out of fear of potential Chinese retaliation), adopting the collective moniker of the Coalition for American Solar Manufacturing.¹⁸³ The petition alleged that eight types of Chinese subsidy programs for renewable energy caused or threatened to cause material injury to U.S. manufacturers of solar cells.¹⁸⁴ The petition accused the Chinese firms benefiting from these subsidies of "dumping" their products into the United States at low prices. It asked the U.S. government to impose punitive tariffs in the form of CVDs and antidumping duties against the Chinese manufacturers.¹⁸⁵

The U.S. International Trade Commission ruled preliminarily in the petitioners' favor¹⁸⁶ and the Department of Commerce announced in March 2012 that it would enact preliminary CVD tariffs of 2.90% to 4.73% against Chinese solar panel manufacturers.¹⁸⁷ China greeted this news in a restrained manner because of the low nominal figures of the tariffs.¹⁸⁸

¹⁸³ Keith Bradsher, *Trade War in Solar Takes Shape*, N.Y. TIMES, Nov. 10, 2011, at B1. For more information about the Coalition of American Solar Manufacturers, see COALITION FOR AM. SOLAR MANUFACTURING, <http://www.americansolarmanufacturing.org> (last visited Mar. 2, 2014).

¹⁸⁴ Crystalline Silicon Photovoltaic Cells, Whether or Not Assembled into Modules, from the People's Republic of China: Initiation of Countervailing Duty Investigation, 76 Fed. Reg. 70,966, 70,966, 70,968–69 (Nov. 16, 2011). The eight types of subsidy programs noted in the petition were: (a) "Grant Programs," (b) "Government Provision of Goods and Services for Less Than Adequate Remuneration (LTAR)," (c) "Government Provision of Land for LTAR," (d) "Policy Lending to the Renewable Energy Industry," (e) "Income and Other Direct Tax Exemption and Reduction Programs," (f) "Indirect Tax and Tariff Exemption Programs," (g) "Export Credit Subsidy Programs," and (h) "Export Guarantees and Insurance for Green Technology." Under the category of grant programs, six specific programs are listed in the petition, of which three are provided by subcentral government entities. Under the category of income and other direct tax exemption and reduction programs, eleven specific programs are listed in the petition, of which two are administered by subcentral government entities and two are specific for certain localities. *Id.* at 70,968–69.

¹⁸⁵ The petition also accused the Chinese manufacturers of "dumping" their products into the U.S. market and asked the U.S. government to impose antidumping duties against Chinese solar cells as well. *See id.* at 70,966.

¹⁸⁶ *See* News Release, U.S. Int'l Trade Comm'n, USITC Votes to Continue Case on Crystalline Silicon Photovoltaic Cells and Modules from China (Dec. 2, 2011), *available at* http://www.usitc.gov/press_room/news_release/2011/er1202jj1.htm.

¹⁸⁷ Crystalline Silicon Photovoltaic Cells, Whether or Not Assembled into Modules, from the People's Republic of China: Preliminary Affirmative Countervailing Duty Determination, 77 Fed. Reg. 17,439, 17,456 (Mar. 26, 2012).

¹⁸⁸ Keith Bradsher & Matthew L. Wald, *A Measured Rebuttal to China*, N.Y. TIMES, Mar. 21, 2012, at B1; *see also* Press Release, Suntech Power Holdings Co., Ltd., Suntech Response to Preliminary Decision on CVD Tariffs in the Subsidy Investigation on PV Cells from China (Mar. 20, 2012), *available at* <http://www.prnewswire.com/news-releases/suntech-response-to-preliminary->

However, two months later, the Department of Commerce announced that it would impose an additional tariff, in the form of an antidumping duty of about 31% to 250% against Chinese solar panel manufacturers.¹⁸⁹ These duties are among the largest ever levied against a product through a unilateral tariff and will likely increase the cost of solar panels significantly.¹⁹⁰

China denounced the American action against its renewable energy subsidies as a worrying indication of U.S. trade protectionism.¹⁹¹ Furthermore, China has sent clear signals that the United States' actions are leading both countries down a dangerous path toward a tit-for-tat green trade war.¹⁹²

Weeks after the U.S. industry petition was filed in October 2011, two Chinese industry associations responded by filing their own petition asking their government to impose trade remedies against U.S. renewable energy producers.¹⁹³ They noted that American producers benefited from an array of subsidies, including the expansion of the renewable energy production tax credit¹⁹⁴ and investment tax credit schemes¹⁹⁵ under the 2008–2009

decision-on-cvd-tariffs-in-the-subsidy-investigation-on-pv-cells-from-china-143531726.html (discussing Chinese solar cell importer Suntech's reaction to the preliminary decision).

¹⁸⁹ Crystalline Silicon Photovoltaic Cells, Whether or Not Assembled into Modules, from the People's Republic of China: Preliminary Determination of Sales at Less than Fair Value, Postponement of Final Determination and Affirmative Preliminary Determination of Critical Circumstances, 77 Fed. Reg. 31,309, 31,321–23 (May 25, 2012).

¹⁹⁰ Keith Bradsher & Diane Cardwell, *Chinese Solar Panels Face Big Tariffs*, N.Y. TIMES, May 18, 2012, at B1; Editorial, *Obama's Tariffs on China's Solar Products Will Cost U.S.*, BLOOMBERG (May 15, 2012, 6:00 PM), <http://www.bloomberg.com/news/2012-05-15/obama-s-tariffs-on-china-s-solar-products-will-cost-u-s-.html>.

¹⁹¹ Press Release, Ministry of Commerce, People's Republic of China, Head of MOFCOM Bureau of Fair Trade for Imports and Exports Comments on U.S. Preliminary Ruling of Anti-Dumping and Anti-Subsidy Investigation Against Imports of Solar Panels from China (Dec. 6, 2011), available at <http://english.mofcom.gov.cn/article/newsrelease/policyreleasing/201112/20111207864408.shtml>.

¹⁹² *Chinese Officials Warn of Protectionism in Solar Panel Sector*, XINHUA (Nov. 12, 2011, 11:45 PM), http://news.xinhuanet.com/english2010/china/2011-11/12/c_122271120.htm.

¹⁹³ See China Chamber of Commerce for Imp. & Exp. of Mach. & Electronic Products & China New Energy Chamber of Commerce, Petition for the Investigation of Trade Barriers Imposed by the United States, Oct. 2011 (on file with authors) [hereinafter Chinese Industries' CVD petition].

¹⁹⁴ See *id.* at 36–37. The program offers a per-kilowatt-hour tax credit for electricity generated by a wide range of eligible renewable energy sources. It was originally enacted as part of the Energy Policy Act of 1992, Pub. L. No. 102-486, § 1212, 106 Stat. 2776 (codified at 26 U.S.C. § 45 (2006 & Supp. IV 2010)), and has been extended on numerous occasions, including in the American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, §§ 1101, 1102, 123 Stat. 115, 319 (codified at 26 U.S.C. §§ 45, 48), in February 2009. For more information, see U.S. Dep't of Energy, *Renewable Electricity Production Tax Credit (PTC)*, DATABASE OF ST. INCENTIVES FOR RENEWABLES & EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US13F&re=1&ee=0 (last visited Mar. 2, 2014).

¹⁹⁵ See Chinese Industries' CVD petition, *supra* note 193, at 29–30, 38–40. The American Recovery and Reinvestment Act of 2009 allowed “taxpayers eligible for the federal renewable electricity production tax credit (PTC)” to receive either a grant from the U.S. Treasury Department or

stimulus acts, the Department of Energy's loan guarantee program for technology innovations for energy efficiency and renewable energies,¹⁹⁶ and accelerated depreciation schemes for renewable energy investments.¹⁹⁷ In addition, the petition also challenged the subsidy programs of nine U.S. states.¹⁹⁸ Chinese producers alleged that the various U.S. subsidy programs harmed their ability to export to the United States and other foreign markets.¹⁹⁹

A week after the U.S. Department of Commerce levied its preliminary antidumping ruling against Chinese solar panels, China's Ministry of Commerce responded with its own preliminary ruling against the subsidy programs of five U.S. states.²⁰⁰ In July 2012, China launched its own antidumping investigation into American and South Korean exports to China of polysilicon, the main ingredient used in solar cells.²⁰¹ This investigation has resulted in preliminary tariffs as high as 57% for American polysilicon and 48.7% for South Korean polysilicon.²⁰² American

"the federal business energy investment tax credit (ITC)" in lieu of the PTC. It also allowed any taxpayers eligible for the ITC to instead receive the grant from the U.S. Treasury Department for new installations begun before December 31, 2013. *See* 26 U.S.C. § 48 (2006 & Supp. V 2011); U.S. Dep't of Energy, *Business Energy Investment Tax Credit (ITC)*, DATABASE OF ST. INCENTIVES FOR RENEWABLES & EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US02F (last visited Mar. 2, 2014).

¹⁹⁶ *See* Chinese Industries' CVD petition, *supra* note 193, at 32. Pursuant to Title XVII of the federal Energy Policy Act of 2005, the Department of Energy was authorized to issue more than \$10 billion in loan guarantees for projects that "avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases; and . . . employ new or significantly improved technologies." 42 U.S.C. § 16513 (2006). A wide range of sectors qualify for these loan guarantees, including solar thermal/photovoltaics, wind, hydroelectric, tidal/wave energy, ocean thermal, and biodiesel. *See* 42 U.S.C. §§ 16511–16516; 10 C.F.R. pt. 609; U.S. Dep't of Energy, *U.S. Department of Energy—Loan Guarantee Program*, DATABASE OF ST. INCENTIVES FOR RENEWABLES & EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US48F&re=1&ee=0 (last visited Mar. 2, 2014).

¹⁹⁷ The two programs mentioned in the petition are the Federal Modified Accelerated Cost-Recovery System (MACRS) and the MACRS Bonus Depreciation (2008–2013). *See* Chinese Industries' CVD petition, *supra* note 193, at 34–35. For more information about these programs, see U.S. Dep't of Energy, Modified Accelerated Cost-Recovery System (MACRS) + Bonus Depreciation (2008–2013), DATABASE OF ST. INCENTIVES FOR RENEWABLES & EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US06F&re=1&ee=1 (last visited Mar. 2, 2014).

¹⁹⁸ The policies under challenge included grants, tax credits, tax rebates, tax exemptions, bonds, loans, and loan guarantees. *See* Chinese Industries' CVD petition, *supra* note 193, at 29–43.

¹⁹⁹ *See id.* at 44–51.

²⁰⁰ Press Release, Ministry of Commerce, People's Republic of China, Announcement No. 26 of 2012 of the Ministry of Commerce of the People's Republic of China on the Preliminary Investigation Conclusion on the U.S. Policy Support and Subsidies for Its Renewable Energy Sector (May 27, 2012), available at <http://english.mofcom.gov.cn/article/policyrelease/buwei/201206/20120608161120.shtml>; Areddy & Ma, *supra* note 4.

²⁰¹ Leslie Hook, *China Launches Anti-Dumping Probe Against US*, FIN. TIMES (July 20, 2012, 12:07 PM), <http://www.ft.com/intl/cms/s/0/3623df3a-d254-11e1-abe7-00144feabdc0.html#axzz2dwN6FgbO>.

²⁰² Wayne Ma, *China Aims Duties at the U.S., South Korea*, WALL ST. J. (Asia ed.), July 19–21, 2013, at 17.

officials responded by saying that they would look closely into whether the Chinese tariffs violate WTO rules.²⁰³

The Chinese actions are a clear signal that two can play this game. Having fired the opening salvo against China, the United States can expect its producers to be hit with similar retaliatory action in the Chinese market. European producers were also placed on notice that they too may be hit with retaliatory tariffs as their products have been subject to a Chinese antidumping investigation since November 2012.²⁰⁴ If the EU did not back down off its preliminary tariffs, China warned that it may follow with sanctions against European polysilicon as well.²⁰⁵

This phenomenon of resorting to unilateral trade remedies cases rather than multilateral WTO litigation is now spreading beyond the already contentious Sino–American relationship. Already, South Korean solar manufacturers have found themselves in the crosshairs of the Sino–American trade row.²⁰⁶ Unilateral trade remedies cases have also spread to Europe²⁰⁷ and India.²⁰⁸ The Indian dispute, in turn, has managed to ensnare Malaysia and Taiwan into the growing solar panel trade wars.²⁰⁹

Following the success of its U.S. case, in July 2012, German manufacturer SolarWorld spearheaded a coalition of European solar panel companies to file an antidumping complaint with the European Commission against Chinese solar panels.²¹⁰ In September 2012, despite strong diplomatic pressure from China to reject the petition, the EU announced that it would launch an investigation.²¹¹ The antidumping case is the largest ever, covering \$20 billion worth of imports.²¹² Weeks later, European companies filed another complaint with the European Commission seeking countervailing duties against Chinese imports as

²⁰³ Michael Martina, *ENERGY UPDATE 3—China Hits U.S., S.Korea with Solar Material Duties, Skirts EU Decision*, REUTERS, July 18, 2013, available at <http://mobile.reuters.com/article/rbssEnergyNews/idUSL4N0FO1VF20130718>.

²⁰⁴ Becky Beetz, *China Launches EU Polysilicon Anti-dumping Investigation*, PV MAG. (Nov. 1, 2012), www.pv-magazine.com/news/details/beitrag/china-launches-eu-polysilicon-anti-dumping-investigation_100009062.

²⁰⁵ Leslie Hook, *China Imposes Tariffs on Polysilicon Exports from US and S Korea*, FIN. TIMES (July 18, 2013, 1:14 PM), <http://www.ft.com/intl/cms/s/0/a82b8294-ef9b-11e2-8229-00144feabdc0.html#axzz2hAsRVjZ1>.

²⁰⁶ Note that South Korea has tried to downplay the trade tensions, with a senior official noting that the Chinese tariffs were “‘expected’ and would not have a big impact” on bilateral trade relations. *Id.*

²⁰⁷ See *infra* notes 210–16 and accompanying text.

²⁰⁸ See *infra* notes 219–21 and accompanying text.

²⁰⁹ See *infra* notes 219–21 and accompanying text.

²¹⁰ Anneli Palmen & Christoph Steitz, *UPDATE 2—SolarWorld Files Anti-Dumping Complaint in EU-Source*, REUTERS, July 25, 2012, available at <http://www.reuters.com/article/2012/07/25/solar-world-eu-complaint-idUSL6E8IPBD920120725>.

²¹¹ Bradsher, *supra* note 5.

²¹² *Id.*

redress for allegedly illegal Chinese government subsidies.²¹³ China responded with a warning that “the EU’s decision to check China’s solar products via protectionist measures is short-sighted and the bloc would become its own victim.”²¹⁴

The investigation sparked considerable tension within the EU. In May 2013, the Commission recommended imposing provisional antidumping duties, averaging 47% against Chinese solar panels.²¹⁵ However, eighteen EU members, including Germany, opposed the Commission’s recommendation, leading the EU Trade Commissioner to agree to impose a lower rate averaging 11.8% for two months, while attempting to negotiate a settlement.²¹⁶ In July 2013, the EU and China agreed that the Chinese producers would limit their exports to a certain quota and sell above a negotiated minimum price.²¹⁷ So long as Chinese exporters complied with the terms of the settlement agreement, the EU would refrain from imposing tariffs. Those that refused, however, would be subject to the 47% provisional duties.²¹⁸

The United States and European trade rows with China also inspired India’s solar panel manufacturers to seek action against its competitors. In June 2012, the Indian Solar Manufacturer’s Association filed a petition accusing American, Chinese, Malaysian, and Taiwanese producers of dumping their products at “ridiculously low” prices into the Indian market.²¹⁹ An industry spokesperson described the foreign products’ prices

²¹³ Joshua Chaffin, *EU Solar-Panel Makers File China Lawsuit*, FIN. TIMES (Sept. 25, 2012, 8:24 PM), <http://www.ft.com/cms/s/0/5e8939fc-072e-11e2-b148-00144feabdc0.html>.

²¹⁴ This comment was delivered via an editorial from Xinhua, China’s official news agency. See Editorial, *It Is Unwise for EU to Launch Solar Trade War Against China*, CHINA DAILY (Sept. 7, 2012, 11:04 AM), http://www.chinadaily.com.cn/bizchina/2012-09/07/content_15742516.htm.

²¹⁵ Joshua Chaffin, *Solar Flares*, FIN. TIMES, May 10, 2013, at 1; Jonathan Stearns, *EU Said to Plan Duties up to 67.9% on China Solar Panels*, BLOOMBERG (May 9, 2013, 12:20 AM), <http://www.bloomberg.com/news/2013-05-08/eu-said-to-plan-tariffs-of-up-to-67-9-on-chinese-solar-panels.html>.

²¹⁶ Peter Spiegel et al., *Brussels Offers Beijing Reprieve in Solar Panel Dispute*, FIN. TIMES, <http://www.ft.com/intl/cms/s/0/1038136e-cd02-11e2-90e8-00144feab7de.html> (last updated June 4, 2013).

²¹⁷ The settlement agreement set a quota of seven gigawatts per year of solar products, with a minimum price of €0.56 per watt. It is “expected to last until the end of 2015.” Joshua Chaffin, *EU and China Settle Trade Fight over Solar Panels*, FIN. TIMES (July 27, 2013, 12:35 PM), <http://www.ft.com/intl/cms/s/0/4e468c26-f6ab-11e2-8620-00144feabdc0.html>.

²¹⁸ *Id.* “Out of 140 Chinese solar panel exporters,” about 90 have agreed to the terms of the settlement. The approximately 50 exporters that have refused to accept the minimum price will be subject to the 47% duties on any further shipments of solar panels to the EU. See Keith Bradsher, *Weak Finish from Europe on Chinese Solar Panels*, N.Y. TIMES, July 29, 2013, at B1; Chaffin, *supra* note 217.

²¹⁹ Shreya Jai, *Solar Equipment Makers Seek Anti-dumping Duty on Imports from China, Malaysia, Taiwan*, ECON. TIMES (June 2, 2012, 3:02 AM), http://articles.economicstimes.indiatimes.com/2012-06-02/news/31984187_1_anti-dumping-duty-dgad-local-manufacturers.

as “artificial and not at all related to the cost of the product.”²²⁰ In late November, the Indian government announced that it had accepted the petition and begun an investigation into the allegations.²²¹ In the near future, a growing number of countries’ solar panel producers could find themselves facing significantly higher tariffs in four major markets—the United States, Europe, China, and India.

Nor are trade remedies cases restricted simply to solar panels. In December 2012, the U.S. Department of Commerce announced that it would levy additional tariffs of up to 71% on Chinese wind turbines and up to 58% on Vietnamese wind turbines, in response to an antidumping case brought by four American companies.²²² A Chinese industry spokesperson denounced the quasi-protectionist move, describing the United States as “trying to protect their own industry amid an economic downturn, without considering the development of the whole industry chain.”²²³ The additional tariffs are expected to cut into the profits of wind developers in the United States and diminish demand for wind power.²²⁴

III. KEY IMPLICATIONS FROM THE RISE OF GREEN INDUSTRIAL POLICY DISPUTES

Trade tensions between major countries are undoubtedly increasing on account of green industrial policies. Five years ago, one might have predicted that the next wave of trade and environment cases would be over carbon taxes and “cap-and-trade” schemes; yet this has not proven to be the case. A dispute over environmentally conditioned market access, such as the European aviation ETS conflict, is now the exception rather than the rule. Since 2009, the vast majority of disputes are Next Generation conflicts, where industrial policies feature both environmental benefits and significant protectionism. This shift has largely gone unnoticed, but it presents major implications for conceptualizing the legal and political economy dynamics of trade and environment conflicts in four key respects.

²²⁰ *Id.*

²²¹ Natalie Obiko Pearson, *India Starts Anti-dumping Investigation of Solar-Cell Imports*, BLOOMBERG (Nov. 29, 2012, 12:28 AM), <http://www.bloomberg.com/news/2012-11-29/india-starts-anti-dumping-investigation-of-solar-cell-imports.html>.

²²² Brian Wingfield, *U.S. Boosts Import Duties on Chinese Wind-Energy Firms*, BLOOMBERG (Dec. 19, 2012, 3:05 AM), <http://www.bloomberg.com/news/2012-12-19/u-s-boosts-import-duties-on-chinese-wind-energy-firms.html>.

²²³ Sarah Chen, *China Slams U.S. Tariff Move*, WALL ST. J. (Asia ed.), July 31, 2012, at 3 (quoting a response to the earlier preliminary ruling).

²²⁴ Diane Cardwell, *U.S. Raises Tariffs on Chinese Wind-Turbine Makers*, N.Y. TIMES, July 28, 2012, at B4.

*A. The Rise of Multiple Fora: The WTO and Domestic
Administrative Courts*

First, Next Generation disputes are being litigated not only at the WTO but also in trade remedies proceedings before domestic administrative agencies. While such proceedings are subject to oversight by WTO rules, they have the advantage of allowing governments to take quick unilateral action without waiting for costly and time-consuming multilateral review.²²⁵

Nevertheless, the development of a second channel for trade dispute litigation presents its own risks. Without a neutral multilateral body serving as an impartial adjudicator, the outcome of these administrative proceedings may be seen as politically motivated. Aggrieved parties will put pressure on their own government to respond in kind. This gives rise to an increased risk of a unilateral action sparking a tit-for-tat trade dispute. The Sino–American and Sino–European trade rows over solar panels provide a disturbing lens into how such disputes can evolve into a brewing trade war.²²⁶

Furthermore, the options for postjudgment compliance differ dramatically when a ruling stems from a WTO proceeding as opposed to a domestic trade remedy proceeding. We will elaborate further on this difference and the resulting implications in Part IV when we assess potential options for legal reform. For now, it is sufficient to note that the rise of green industrial policies has opened the door to trade and environment disputes being subject to domestic administrative proceedings in addition to WTO proceedings. This presents new risks for escalating trade tensions.

B. “Good” Versus “Bad” Actors: It’s Become Much More Complicated

Second, the rise of Next Generation disputes has upended the Classic stereotype of the developed country as the environmentally friendly actor and the developing country as environmentally unfriendly. In many instances, the roles are now reversed. Often, it is the developing country that adopts the pro-environmental policy, and it is the developed country that seeks to have the policy declared illegal under WTO law. Even in instances where the country adopting the pro-environmental subsidy policy is a developed country (e.g., Canada’s feed-in-tariff program), it is its fellow developed countries that seek to have it terminated.²²⁷

To the extent that the defendant countries are viewed as “bad” actors, it is not because of their unwillingness to tackle environmental problems, but because of their demand for rents for their domestic industry in

²²⁵ See *supra* Part II.C.2.

²²⁶ See *supra* Part II.C.2.

²²⁷ See *supra* notes 166–67 and accompanying text.

exchange for pro-environmental actions. Such demands may reduce welfare overall and violate the spirit of international trade rules. Yet, even here, the case against them is not altogether clear. Some sympathize with the developing countries' argument that they are being asked to bear a disproportionate cost for environmental harms caused primarily by developed countries.²²⁸ Developing countries have a pressing need to lift their populations out of poverty, and developed countries have steadfastly refused to make the standard-of-living sacrifices necessary to move toward developing countries' much lower per capita emissions rates. To some, this quid pro quo demand may appear reasonable, especially when trade law carves out exceptions to allow for other welfare-reducing rents that reflect historical realities.²²⁹

Even with the export restrictions, China points out that it could simply follow the developed countries' lead of limiting production and exporting the environmentally harmful processing steps to other countries.²³⁰ The fact that it chooses to bear this cost internally, some Chinese argue, should entitle it to tax others that "free ride" off the environmental harms that it internalizes.²³¹ In levying such a tax, is China behaving as a mercantilist actor exploiting its natural resources for strategic gain? Or is China simply taking a more holistic view of supply chain externalities and forcing consumers to incur the cost of upstream environmental harms if they refuse to provide compensating positive externalities downstream? Would overall global welfare truly be better off, China asks, if it simply shut down production over environmental concerns, as the United States and others have done, thereby triggering a massive spike in input prices, instead of trying to remedy perceived differences in externalities through tax and quota policies? At the very least, these questions show that the situation is far less black-and-white than the earlier Classic cases.

²²⁸ See, e.g., Mark A. Drumbl, *Northern Economic Obligation, Southern Moral Entitlement, and International Environmental Governance*, 27 COLUM. J. ENVTL. L. 363, 366 (2002); Amy Sinden, *Allocating the Costs of the Climate Crisis: Efficiency Versus Justice*, 85 WASH. L. REV. 293, 295–96 (2010); Cheng Zheng-Kang, *Equity, Special Considerations, and the Third World*, 1 COLO. J. INT'L ENVTL. L. & POL'Y 57, 62 (1990).

²²⁹ For example, preferences given by former imperial powers to their former colonies were grandfathered and are permissible, in contravention of the most-favored-nation treatment requirement. See GATT, *supra* note 12, art. I:2–3.

²³⁰ *China Defends Rare Earth Export Policy Adjustment*, XINHUA (June 28, 2012, 6:45 PM), http://news.xinhuanet.com/english/china/2012-06/28/c_131682241.htm (quoting a Foreign Ministry spokesman asking other countries to boost their production); Lilian Luca, *Transition to the Future: Mining and Mineral Processing in China*, CHINA ANALYST (May 2010), <http://www.thebeijingaxis.com/tca/editions/the-china-analyst-may-2010/47> (suggesting that China will increasingly tap into mining and processing companies in developing countries as domestic environmental concerns grow and Chinese firms seek to expand global market share).

²³¹ Interview with Advisor to Chinese Government (2011-G2).

C. *The Changing Political Economy: A Shattering of Key Alliances*

Not only has the role of states changed in these conflicts, but so too has the domestic political economy of these states. The earlier Classic disputes featured an unusual alliance in the U.S. of labor unions, domestic producers, and environmental activists in developed countries.²³² This was hardly a natural partnership, but their interests aligned in favor of the policy of limiting environmentally unfriendly imports. Environmental and animal rights groups took the lead, using market access to put pressure on otherwise reluctant foreign producers; labor unions saw it as a means to protect domestic jobs; and domestic producers saw it as a way to level the playing field from stringent domestic environmental regulations.²³³

Building on the strength of these alliances, the environmental lobby was extremely active in asserting its interests. Following the *Tuna/Dolphin* ruling against the U.S. import ban, environmental groups raised the alarm at the eagerness of unelected, ad hoc adjudicators in Geneva to neuter domestic environmental regulations.²³⁴ Environmental groups quickly added trade law experts and lobbyists to their staff to lobby government delegations and bureaucrats at the GATT/WTO headquarters in Geneva.²³⁵ They also mobilized public opinion through provocative articles and street protests.²³⁶ Their campaigns made trade and environment a major issue, forcing the WTO to be more conscious of striking a proper balance between trade and environmental interests.

With the rise of Next Generation disputes, this alliance on trade matters has been challenged. Labor unions have turned avowedly anti-environment as far as the green industrial policies of developing countries are concerned. In September 2010, it was the United Steelworkers, not domestic producers, who first petitioned the White House to take action against Chinese stimulus spending for China's renewable energy sectors. "These subsidies," the union argued, "are helping Chinese producers ramp up production, seize market share, drive down prices, and put global competitors out of business."²³⁷ Although the White House demurred on the overall request, the petition did result in the U.S. filing of the *China-Wind*

²³² Note that our argument is not that this alliance held firm across all environmental matters, but rather only as it pertained to trade disputes. These groups might have opposed one another domestically when Congress was deciding whether to adopt the environmental measure. Only after it was adopted are we contending that an alliance developed where they collectively pushed to expand its application to include trading partners.

²³³ See *supra* notes 37–40 and accompanying text.

²³⁴ See, e.g., Robert F. Housman & Durwood J. Zaelke, *The Collision of the Environment and Trade: The GATT Tuna/Dolphin Decision*, 22 ENVTL. L. REP. 10268 (1992); David Hunter's observation at text accompanying *infra* note 246.

²³⁵ Interview with David Hunter, *supra* note 43.

²³⁶ See *supra* note 40 and accompanying text.

²³⁷ UNITED STEELWORKERS, EXECUTIVE SUMMARY, *supra* note 164, at 4.

Power Equipment case.²³⁸ Labor unions have also actively supported the ongoing trade remedies cases against Chinese solar panel manufacturers.²³⁹ They view the imposition of unilateral tariffs as a means to stem the outsourcing of manufacturing jobs in the renewable energy sector to China and other countries.

Domestic industry producers have split their allegiances. In the recent U.S. trade remedies case against China, industry divided into two rival coalitions. The Coalition for American Solar Manufacturing (CASM), composed of six solar panel manufacturers (who chose to remain anonymous out of fear of potential Chinese retaliation), supported unilateral tariffs.²⁴⁰ A rival group of 150 solar companies formed the Coalition for Affordable Solar Energy (CASE) to lobby against tariffs.²⁴¹ CASE argued that trade remedies would backfire, costing the United States up to 60,000 jobs as solar adoption rates and installation jobs decreased.²⁴² The industry divide represents, on the one hand, the split between upstream producers and downstream users, and on the other hand, the split between domestic producers that have already outsourced some production to China versus those that are still attempting to keep manufacturing in the United States. Domestic industry no longer speaks with a united voice.²⁴³ The most interesting actors, however, have been the environmental groups. Their actions in recent Next Generation disputes pose a stark contrast to their loud activism in the earlier Classic disputes, suggesting a Sherlock Holmes phrase—the dog that didn’t bark. The WTO ruling in *China-Raw Materials*, declaring that China is not allowed to use export taxes for *any* environmental purposes whatsoever, is of serious concern for those who believe that China must be encouraged to raise its level of environmental protection.²⁴⁴ So too are the unilateral trade remedies cases in the United States. These rulings raise the price of solar panels and delay their adoption. Yet, after actively crusading for a more pro-environmental

²³⁸ *China-Wind Power Equipment* Request for Consultations (U.S.), *supra* note 163.

²³⁹ Erik Siemers, *Steelworkers Union Joins SolarWorld’s China Fight*, SUSTAINABLE BUS. OR., <http://www.sustainablebusinessoregon.com/articles/2011/11/steelworkers-union-joins-solarworlds.html> (last modified Nov. 8, 2011).

²⁴⁰ Bradsher, *supra* note 183. For more information about the Coalition of American Solar Manufacturers, see COALITION FOR AM. SOLAR MANUFACTURING, *supra* note 183.

²⁴¹ Coalition for Affordable Solar Energy, *Case Fact Sheet: Protecting the Future of American Solar Power* (on file with the *Northwestern University Law Review*).

²⁴² *Id.*

²⁴³ The Solar Energy Industries Association (SEIA), which includes both manufacturers as well as project developers, in an attempt to straddle this divide and speak for the industry as a whole, has taken a policy stance calling for “[a]lternatives to [i]nternational [t]rade [l]itigation” (as a nod to those opposed to trade remedies) while also emphasizing the need “to build consensus on government best practices, including acceptable forms of industry support” (as a nod to domestic manufacturers harmed by foreign practices). See SOLAR ENERGY INDUS. ASS’N, 2013 POLICY PRIORITIES—FEDERAL & STATE 2 (2013), http://www.seia.org/sites/default/files/resources/2013-Policy-Priorities2013-03-11_0.pdf.

²⁴⁴ For a further discussion of the WTO ruling, see *supra* notes 160–62 and accompanying text.

agenda at the WTO throughout the 1990s and early 2000s, global environmental groups have retreated into near silence. Not one environmental group criticized these rulings.

Environmental groups' lobbying of the WTO Secretariat has also quieted in recent years, despite the uptick in disputes. In the three WTO cases challenging Chinese green industrial policies, no environmental group weighed in with a formal amicus brief or even an informal press commentary about the environmental issues at stake. Nor is the silence limited to disputes with China. Even in Canada's feed-in-tariff program, a case between developed countries, only three Canadian environmental groups filed a joint amicus brief in favor of Canada's program.²⁴⁵ All of the major environmental groups have remained quiet.

Why didn't the dog bark? Why has the environmental community, particularly U.S. environmental and antiglobalization groups that took such a leading role in denouncing the WTO's *Tuna/Dolphin* and *Shrimp/Turtle* decisions, been so quiet in the face of decisions with similarly practical significance, if not more so?

Based on our interviews with several environmental NGO attorneys, a number of factors appear to be at work. First, there is a capacity constraint problem. Some environmental groups have scaled back on the staff and resources focusing on trade and environment issues. Even for those with staff, the Next Generation cases implicate new areas of substantive trade law with which their staff lawyers may be unfamiliar. As David Hunter, former Executive Director of the Center for International Environmental Law (CIEL), explains:

Back in the 1990s, when this became a major issue, CIEL had four attorneys on this. They have closed their Geneva office. They now have nobody working full time on [trade and environment]. The globalization dispute has settled out and people moved to other issues. The environmental community no longer has as much capacity to engage in the details of trade and environment disputes. Plus, trade law has moved forward and it is a technical area. You can't now just wade in and engage with people.²⁴⁶

Much of environmental groups' silence is due to a strategic choice about competing priorities. For many environmental groups, passage of effective national and international climate change reduction measures sits atop their wish list. For either of these to happen, there must be U.S. congressional legislation. The failure of the Copenhagen negotiations was due in part to Congress's failure to pass the Waxman–Markey climate bill—the United States could not offer any binding commitments in

²⁴⁵ Amicus Curiae Submission of International Institute for Sustainable Development et al., *Canada—Certain Measures Affecting the Renewable Energy Generation Sector*, WT/DS412/R (2012).

²⁴⁶ Interview with David Hunter, *supra* note 43.

international negotiations.²⁴⁷ It is hard to get other countries to adopt a treaty with targets and timetables if the world's largest economy has nothing on the table.

For a domestic bill to pass, labor's support remains critical. In return, this requires keeping quiet about Next Generation disputes that place environmental and labor interests at loggerheads. It is telling that the White House did not receive a single comment from environmental groups in response to organized labor's petition against China's wind power subsidy programs. From our interviews, there is no doubt that many in the environmental community understood the climate change benefits from China's initiatives, but they did not want to risk alienating organized labor. As David Hunter observed, "Given the constituency the environmental groups are trying to get along with, there is no net positive in putting resources into that issue."²⁴⁸ Environmental Defense Fund's trade expert, Jennifer Haverkamp, agrees. "Environmentalists spent lots of effort to create the BlueGreen alliance and develop momentum for climate legislation. They are going to tread carefully when labor has put a lot of effort into a trade challenge."²⁴⁹ The same is true for the solar power conflicts. Many environmental groups well understand the anti-environmental costs associated with CVDs and antidumping duties. Nevertheless, they do not want to be seen as pro-China and against the American "green collar" worker, lest they lose organized labor's support for any future climate change legislation.

Despite the clear environmental cost stemming from the WTO and domestic trade remedies rulings, most environmental groups are choosing to hold their fire, hopeful that the larger prize of climate legislation remains within their grasp. This silence, however, is not without cost. Because environmental groups have sidelined themselves, the decisions that industrialized governments are making in the Next Generation disputes are increasingly reflective of the interests of labor unions and domestic producers that have not outsourced production overseas. To the extent that there is opposition, it is coming from domestic producers with more globalized supply chains and from downstream producers.²⁵⁰ Importantly, and unlike the Classic trade and environment disputes, pressure is not coming from the environmental interest groups, though they most certainly

²⁴⁷ Stephen L. Kass, *Examining the New Realities from the Copenhagen Accord*, N.Y. L.J., Dec. 24, 2009, at 3.

²⁴⁸ Interview with David Hunter, *supra* note 43. This was confirmed in a separate interview with Marcos Orellana. Telephone Interview with Marcos Orellana, Dir. of Human Rights & Env't Program, Ctr. for Int'l Env'tl. Law (June 9, 2011).

²⁴⁹ Telephone Interview with Jennifer Haverkamp, Int'l Climate Dir., Env'tl. Def. Fund & Former Assistant U.S. Trade Representative for Env't & Natural Res., Office of U.S. Trade Representative (June 11, 2012).

²⁵⁰ See *supra* notes 241–42 and accompanying text.

have a dog in this fight since the Next Generation cases will influence the shape of green industrial policies going forward.

As a result of this silence, the environmental implications of the Next Generation disputes no longer factor heavily into the political calculus of how to proceed on WTO cases or domestic trade remedies litigation. Domestic policymakers, when deciding trade remedies or WTO actions, instead weigh primarily the interests of labor and different domestic producers, without substantial regard for the environmental impact. The lack of serious environmentalist pressure is a significant loss in the international trade debate.

While less obvious, the silence of environmental groups is also jeopardizing efforts to build alliances and constituencies in China, India, and other developing countries. In many of these countries (China in particular) the lack of a robust domestic NGO community means that domestic interest groups rely on foreign activists to champion their cause. Chinese and Indians argue, and not without cause, that they are being sent distinctly mixed messages.²⁵¹ Anyone who follows the climate change debate well understands that as go India and China with greenhouse gases, so goes the world. China is already the world's largest emitter of greenhouse gases,²⁵² and India is on pace to rival the United States by 2030.²⁵³ As a result, even if policy changes result in massive greenhouse gas reductions in the United States and EU over the next decade, these would be for naught if India and China do not follow course. It is no surprise that the environmental community has so vigorously called for actions that will strengthen India and China's reliance on renewable sources of energy.²⁵⁴

One can well understand China and India's frustration, then, when policies that do exactly this are subject to international condemnation, challenges at the WTO, and unilateral trade remedies. And when this happens, the very environmental groups that have been calling on China and India to increase their use of renewables refuse to condemn such actions. Chinese and Indians are becoming skeptical about whether these environmental groups are truly the global interest groups that they claim to be, as willing to stick up for the environmental interests of developing

²⁵¹ Interview with Advisor to Chinese Government (2011-G2), *supra* note 231; Interview with Indian Government Official (2012-G2); Interview with Advisor to Indian Government (2012-G4).

²⁵² Keith Bradsher, *China to Pass U.S. in 2009 in Emissions*, N.Y. TIMES, Nov. 7, 2006, at C1.

²⁵³ ROSS GARNAUT, GLOBAL EMISSIONS TRENDS 29 (Garnaut Climate Change Review Update 2011, Update Paper 3, 2011).

²⁵⁴ See, e.g., *China Environmental News Alert*, SWITCHBOARD (Oct. 30, 2013), http://switchboard.nrdc.org/blogs/chinagreenlaw/china_environmental_news_alert_122.html (stating that the Natural Resources Defense Council (NRDC) "has been working in China for over fifteen years" on clean energy issues); *NRDC's India Initiative on Climate Change and Clean Energy*, NAT. RESOURCES DEF. COUNCIL, <http://www.nrdc.org/international/india> (last visited Mar. 2, 2014) (describing the NRDC's initiative in India).

countries as those of industrialized ones. Instead, they increasingly view these environmental groups as beholden to the special interests of the West, and are therefore more skeptical of engaging with global environmental groups to find common solutions.²⁵⁵

The export restriction cases on raw materials and rare earths present environmental groups with a different challenge. On its face, the WTO rulings in *China-Raw Materials* and *China-Rare Earths* appear to be just the kind of action environmental and antiglobalization groups have denounced in the past—international trade law striking down domestic measures that protect the environment.²⁵⁶ Yet, no environmental group has chosen to weigh in. Here, the problem facing environmental groups is not the question of jeopardizing a political coalition for climate change legislation but, rather, whether this is a battle worth fighting. China's environmental justifications for the export restrictions are plausible but not compelling. They could well be bogus justifications for protectionist policies. Environmental groups do not want to risk appearing as apologists for Chinese policies that are very unpopular in the United States, EU, and Japan and that indeed may threaten national security. Therefore, rather than condemning the WTO rulings, they have simply remained quiet.

The basic point is that the rise of green industrial policy disputes has dramatically changed the dynamics of the domestic politics on trade and the environment. No longer is there a stable alliance of disparate interest groups pushing governments in developed countries to take a more pro-environmental stance against the incursion of trade law, as there was in the Classic cases. Instead, the interest groups themselves are split. The labor unions remain vocal, but have switched to railing against pro-environmental policies in other countries, now that developing countries are implementing them through industrial policy. Domestic producers themselves are split, reflecting the different strategies that they have taken with respect to managing global supply chains. And environmental groups, whom one might expect to be resisting these anti-environmental developments, are instead staying silent. As they stake their strategy on maintaining key domestic alliances for potential future climate change legislation, they risk losing the trust of natural allies in developing countries.

²⁵⁵ One interviewee explained, “Western advocacy groups are very useful when we want to direct international attention toward an environmental problem. But we do not trust them when it comes to giving advice about what should be our government’s policies.” Interview with Indian Government official (2012-G2), *supra* note 251. *Accord* Interview with Advisor to Chinese Government (2011-G2), *supra* note 231. Of course, this may not be true of an individual environmental matter. For example, ordinary Chinese are more likely to trust foreign recordings of air quality than those of their own government. See *Clearing the Air?*, *ECONOMIST*, Jan. 14, 2012, at 41. However, our point pertains to larger systemic policy prescriptions.

²⁵⁶ See *supra* notes 160–62; see also *supra* note 171 (discussing the Panel ruling in *China-Rare Earths* which was not yet released as of this writing).

D. The Loss of Balance

So far, we have suggested that the rise of Next Generation green industrial policy disputes has altered both the international and domestic political economy of trade and environment cases. A similarly dramatic shift is also occurring in the WTO law being applied in these disputes with respect to how adjudicators balance the competing trade and environmental interests.

Recall from Part I that almost all of the earlier Classic disputes involved alleged violations of GATT provisions. With varying success, countries sought to justify their trade measures under the GATT Article XX exceptions, which involve a two-step “balancing” mechanism between trade and environmental interests. The mechanism requires adjudicators to first consider whether the policy measure fulfills the substantive obligation of being “necessary to protect human, animal or plant life or health”²⁵⁷ or “relating to the conservation of exhaustible natural resources . . . made effective in conjunction with restrictions on domestic production or consumption.”²⁵⁸ Provided this is met, adjudicators must next examine whether the policy measure nevertheless “would constitute a means of arbitrary or unjustifiable discrimination” or “a disguised restriction on international trade.”²⁵⁹ GATT Article XX effectively requires adjudicators to weigh whether the positive environmental impact of a regulation outweighs its potential negative trade impact. If so, the door is open for an exception to a country’s GATT obligations.

While activists initially worried that this balancing tilted in favor of trade interests, the *Shrimp/Turtle* ruling helped assuage these concerns by confirming that pro-environmental policy measures with extraterritorial effects could be implemented so long as this was done in a fair and nondiscriminatory manner.²⁶⁰ With the Classic cases, there was a perception of a relatively fair balancing test at work. As Jennifer Haverkamp, former Assistant U.S. Trade Representative for Environment and Natural Resources and now International Climate Director at the Environmental Defense Fund, observes, “environmentalists felt they had won the transparency battles and the *Shrimp/Turtle* Appellate Body decision made clear that trade was not the evil black box it had looked like in 1990.”²⁶¹

²⁵⁷ GATT, *supra* note 12, art. XX(b).

²⁵⁸ *Id.* art. XX(g).

²⁵⁹ *Id.* art. XX.

²⁶⁰ See, e.g., Howard F. Chang, *Toward a Greener GATT: Environmental Trade Measures and the Shrimp-Turtle Case*, 74 S. CAL. L. REV. 31, 32 (2000) (“The ruling suggests that countries can defend unilateral import bans as permissible environmental measures under the GATT as long as they avoid unfair discrimination.”); see also Howse, *supra* note 41, at 516–21 (addressing critics of the Appellate Body’s *Shrimp/Turtle* jurisprudence).

²⁶¹ Interview with Jennifer Haverkamp, *supra* note 249.

In most Next Generation disputes, by contrast, this balancing of trade and environmental interests disappears. Instead, the applicable law effectively acts as a strict liability standard, requiring adjudicators to find that so long as there is a violation of a trade obligation, the environmental policy is illegal. This is true regardless of the size of the environmental impact or whether it is sufficiently large enough to offset the negative trade impact. The disappearance of a balancing test means that in many of the Next Generation disputes, trade interests will trump.

Why has this happened? The environmental defenses under GATT Article XX are available to the defendant if the complaint involves allegations of a breach of a GATT obligation.²⁶² Unlike the Classic cases, most of the Next Generation disputes are not about breaches of GATT obligations. A large number of the Next Generation disputes concern the legality of pro-environmental subsidies issued as part of an industrial policy. This is true of Canadian, European, and Indian feed-in tariffs, China's wind and solar subsidies, and the renewable energy rebate programs of U.S. states. The applicable treaty law governing such subsidies is the Subsidies and Countervailing Measures Agreement (SCM Agreement), not the GATT.²⁶³

Unlike the GATT or the Agreement on Technical Barriers to Trade (TBT),²⁶⁴ the SCM Agreement does not contain an implicit balancing test within its treaty provisions. Instead, the SCM Agreement originally addressed environmental issues through the provision of a "safe harbor" exception in Article 8 of the SCM Agreement. Certain subsidies were deemed "non-actionable," meaning that no country could take action, either unilaterally through trade remedies or multilaterally through WTO litigation, against such subsidies.²⁶⁵ However, this environmental safe harbor expired in 2000 and has not been renewed.²⁶⁶ The same is true of the nonactionable category for research and development, under which subsidies for basic research of renewable energy would have fallen.²⁶⁷

²⁶² The AB has also held that the GATT Article XX exceptions are available in the context of an accession protocol where explicit textual mention is made of the WTO agreements inclusive of the GATT. See Appellate Body Report, *China—Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products*, ¶¶ 217–33, WT/DS363/AB/R (Dec. 21, 2009).

²⁶³ For a reminder of the applicable provisions, see *supra* Part II.B.

²⁶⁴ Agreement on Technical Barriers to Trade, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1868 U.N.T.S. 120.

²⁶⁵ SCM Agreement, *supra* note 91, art. 8.2. This exception was limited to "assistance to promote adaptation of existing facilities to new environmental requirements imposed by law and/or regulations which result in greater constraints and financial burden on firms," and subject to additional requirements concerning its costs, recurrence, scope, and general availability. *Id.* art. 8.2(c) (footnote omitted).

²⁶⁶ *Id.* art. 31.

²⁶⁷ *Id.* art. 8.2(a). This exception was subject to further limitations regarding its cost and scope.

Today, the SCM Agreement has no environmental exceptions. So long as there is a violation of any SCM Agreement provision, the subsidy program must be abandoned, no matter how great the environmental benefit.

Some scholars have suggested that the GATT Article XX exception could be interpreted as applying to the SCM Agreement in limited contexts.²⁶⁸ Rob Howse, for example, advocates having the WTO “simply clarify through an interpretative understanding that the existing Article XX applies to the SCM Agreement, given its status as a *lex specialis* of the GATT.”²⁶⁹ GATT Article XX need not be incorporated into the SCM Agreement directly; instead, the WTO could simply interpret the SCM Agreement as permitting nondiscriminatory subsidies for legitimate public purposes.²⁷⁰ To date, the WTO Appellate Body has appeared reluctant to take such an approach. When it has turned to the jurisprudence of one treaty to examine the meaning of another, it has done so in instances where the legal terminology employed in both treaties is nearly identical (i.e., there is a clear “textual hook”).²⁷¹ To date, no GATT exception has been declared applicable to a non-GATT treaty on account of the latter being *lex specialis*. Making such a move more difficult is the fact that the SCM Agreement was not silent about exceptions, but addressed them through the Article 8 provisions on nonactionable subsidies, which negotiators explicitly chose not to renew.²⁷² Under current jurisprudence, the SCM Agreement does not provide leeway for a balancing test for environmental interests. So long as there is a violation of a trade interest, because the pro-environmental subsidy falls into a prohibited category or demonstrates “adverse” effects, it is illegal and must be abandoned.

The lack of a balancing mechanism also holds true in the domestic trade remedies cases that feature prominently in the Next Generation disputes. Countervailing duty cases fall under the SCM Agreement

²⁶⁸ For an overview of both sides to this debate, see Rubini, *supra* note 14, at 559–70.

²⁶⁹ ROBERT HOWSE, CLIMATE MITIGATION SUBSIDIES AND THE WTO LEGAL FRAMEWORK 18 (2010).

²⁷⁰ Howse has suggested that this might be done through interpreting Article 2.1(b) of the SCM Agreement as allowing for such. *Id.* at 21.

²⁷¹ See, e.g., Panel Report, *China—Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products*, WT/DS363/R ¶¶ 7.756–7.759 (Aug. 12, 2009) (applying GATS Article XIV(a) jurisprudence on “public morals” to a GATT Article XX(a) defense using identical language); Panel Report, *United States—Measures Affecting the Production and Sale of Clove Cigarettes*, WT/DS406/R ¶¶ 7.362–7.369 (Sept. 2, 2011) (applying GATT Article XX(b) jurisprudence to the interpretation of the “more trade restrictive than necessary” standard to a TBT Article 2.2 claim using identical language).

²⁷² See Sadeq Z. Bigdeli, *Resurrecting the Dead? The Expired Non-Actionable Subsidies and the Lingering Question of ‘Green Space,’* 8 MANCHESTER J. INT’L ECON. L., no. 2, 2011, at 2, 8–9 (explaining that the WTO members allowed the green-light subsidies to expire after “[i]t became apparent that diverging views of member courtiers were simply too wide to bridge”); WTO Comm. on Subsidies & Countervailing Measures, *Minutes of the Regular Meeting Held on 1–2 November 1999*, G/SCM/M/24 (Apr. 26, 2000).

described above. Antidumping cases are governed by their own specialized treaty, the WTO Agreement on Antidumping (ADA), which again does not have an environmental exception.²⁷³ So long as the complaint can prevail on the three prongs of dumping, injury, and causation, the government authorities will unilaterally impose an antidumping duty.²⁷⁴ No offset is permitted in the tariff rate for environmental reasons; hence, the recent U.S. antidumping ruling against Chinese solar panels raised tariffs by as much as 250%.²⁷⁵

To be clear, balancing does not disappear in every Next Generation case. In instances where export quotas are challenged, GATT Article XI is implicated and therefore the GATT Article XX defenses are available.²⁷⁶ However, *China-Raw Materials* clarified that even in some Next Generation cases involving GATT provisions, the balancing mechanism still may not be available because the GATT Article XX defense was bargained away, either explicitly or implicitly, as part of accession negotiations when China joined the WTO. The Appellate Body confirmed this was the case in China's Protocol of Accession with respect to export taxes.²⁷⁷ Thus, while the Article XX balancing of interests is available for other countries, it disappears for China's use of export taxes. This issue-specific, country-specific approach to not applying the GATT Article XX balancing test has huge implications, given China's central role in global environmental affairs.

Taken together, the scope for balancing trade versus environmental interests has shrunk dramatically in Next Generation disputes. GATT Article XX balancing remains relevant in a few instances (e.g., export restrictions), but, even then, it is subject to caveats depending on the defendant and the conditions of its WTO accession protocol. For the vast majority of cases (i.e., those concerning subsidies or trade remedies), no balancing of interests is authorized under the applicable law. So long as the trade interests are violated, the policy is illegal. Trade interests simply win, regardless of the size of the environmental benefit produced by the measure.

IV. ARE LEGAL REFORMS NECESSARY?

If one cares about environmental protection, the rise of Next Generation disputes paints a disturbing picture. While Part II provided the optimistic news that countries, including China and India, are undertaking

²⁷³ See Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1868 U.N.T.S. 201 [hereinafter WTO Antidumping Agreement].

²⁷⁴ See *id.* arts. 2, 3; GATT, *supra* note 12, art. VI.

²⁷⁵ See *supra* note 189 and accompanying text.

²⁷⁶ See GATT, *supra* note 12, arts. XI, XX.

²⁷⁷ See *supra* note 162 and accompanying text.

policies to address global environmental problems, Part III showed that these efforts may well be stymied by three developments. First, developed countries, which have traditionally been pro-environmental in their trade policy, are actively opposed to many of China and India's pro-environmental policy measures because of their industrial policy linkages. China has responded by challenging the trade legality of American and European renewable energy policies. Second, environmental groups, which have traditionally championed environmental interests in these disputes, have turned conspicuously silent and are unwilling to press for greater accommodation of green industrial policy measures. The debate, in turn, is dominated by labor unions and domestic producers, which have pivoted from defending domestic pro-environmental trade regulations toward opposing foreign green industrial policies. Third, the applicable law itself is shifting away from accommodating environmental concerns, given that neither the SCM Agreement governing subsidies nor the agreements governing unilateral trade remedies require any balancing of environmental versus trade interests.

As a result, and not surprisingly, the rulings in the Next Generation disputes have been unfavorable to environmental interests. In *China-Raw Materials*, the WTO ruled that China must eliminate the use of export quotas and taxes on natural resources whose extraction and processing are environmentally harmful.²⁷⁸ The ongoing *China-Rare Earths* case follows a similar fact pattern, with a similar ruling from the WTO Panel (with the appeal still pending as of this writing). Domestic trade remedies cases have resulted in the U.S. Department of Commerce levying tariffs of 31%–250% on Chinese solar panels, raising costs significantly for solar installation.²⁷⁹ The EU has followed the United States' lead, and China may well respond with trade remedies of its own against U.S. renewable energy products. Meanwhile, Canada's feed-in-tariff program has already been deemed illegal by the WTO, and European and Indian programs are currently under attack at the WTO.²⁸⁰

While individual cases have been in the news, the larger patterns underlying this overall shift and their implications have largely escaped the attention of commentators. Only a handful of academics and analysts have commented on this phenomenon, with most arguing for comprehensive reform of WTO treaties.²⁸¹ We begin Part IV with a short overview of the

²⁷⁸ *China-Raw Materials* AB Report, *supra* note 13, ¶¶ 266, 344, 362.

²⁷⁹ See *supra* note 189 and accompanying text.

²⁸⁰ See *supra* notes 6, 169, 173–74 and accompanying text.

²⁸¹ See, e.g., HOWSE, *supra* note 269, at 17–24; COSBEY, *supra* note 14, at 3 (“[T]he current rules need to be revisited in the light of what we now know about how to do industrial policy”); ANDREW GREEN, *Trade Rules and Climate Change Subsidies*, 5 *WORLD TRADE REV.* 377, 404–10 (2006); GABRIELLE MARCEAU, *The WTO in the Emerging Energy Governance Debate*, in *GLOBAL CHALLENGES AT THE INTERSECTION OF TRADE, ENERGY AND THE ENVIRONMENT* 25, 39–40 (Joost Pauwelyn ed.,

main reform proposals that have been advocated. We then posit what is likely to happen if, as is likely, the status quo continues. We argue that the situation may not be as bleak as feared. Instead, the expected environmental consequences will vary dramatically depending on the fora in which trade litigation is pursued. While most attention has been focused on the WTO, we suggest that domestic trade remedies cases pose a much greater threat to environmental interests. This area has received scant attention but, in fact, warrants the greatest need for reform. We therefore conclude by offering suggestions for a series of narrowly tailored reforms of trade remedies to better accommodate the environmental interests implicated by Next Generation cases.

A. *An Assessment of Existing Reform Proposals*

In Part III.D, we briefly discussed one reform that some scholars have advocated: interpreting the GATT Article XX exceptions as applicable to non-GATT agreements, on account of the latter being *lex specialis*.²⁸² Such a move would most likely occur through a WTO Appellate Body decision. Another approach would be for WTO members themselves to reform the law through negotiations.

Before elaborating on such proposals, it should be noted, at the outset, that not everyone agrees further legal reforms are necessary or even warranted. The standard view of the multilateral trading system is that it exists to facilitate the creation of “reciprocal and mutually advantageous arrangements directed to the substantial reduction of tariffs and other barriers to trade.”²⁸³ This, in turn, raises living standards through welfare gains from trade. At its core, the system depends on the principles of reciprocity and nondiscrimination. When these principles are violated, even in the name of environmental protection, the regime should crack down on violators. Otherwise, protectionism in the name of the environment becomes too easy and undermines the trading system.

For those who embrace this view, the disappearance of a balancing test in many of the Next Generation disputes is not necessarily troubling. Certain violations, such as subsidies with local-content requirements, should be illegal *per se* because they always violate the core principles and open the door to protectionism. This was the standard “free trader” response to the first *Tuna/Dolphin* case back in the 1990s.²⁸⁴

2010); Rubini, *supra* note 14; Thomas Cottier et al., *Energy in WTO Law and Policy* (NCCR Trade Regulation, Working Paper No. 2009/25, 2009).

²⁸² See *supra* note 269 and accompanying text.

²⁸³ See Marrakesh Agreement Establishing the World Trade Organization pmbi., Apr. 15, 1994, 1867 U.N.T.S. 154.

²⁸⁴ See, e.g., HUNTER ET AL., *supra* note 36, at 1206; Winfried Lang, *WTO Dispute Settlement: What the Future Holds* (1996), reprinted in HUNTER ET AL., *supra* note 36, at 1219–20.

Those who advocate reform tend to focus on the trade regime's obligation to promote both standards of living and sustainable development, though from two different perspectives. The first is a legalist view that the (re-)creation of some form of an environmental exception is necessary to correct market failures. Government regulators must be given the scope to provide the proper incentives for remedying public externality problems. This group has largely pushed for an environmental "safe harbor" for certain subsidies. The tilt toward trade interests in Next Generation cases is due, in part, to the absence of an environmental exception in the SCM Agreement comparable to GATT Article XX. This was not always the case. The SCM Agreement originally included an exempt category of "non-actionable" (or "green light") subsidies containing certain environmental subsidies.²⁸⁵ However, this category expired on January 1, 2000, and was not renewed.²⁸⁶ Over the past decade, several scholars have championed for its reintroduction, with most favoring a broadening of the scope of permissible environmental subsidies.²⁸⁷

²⁸⁵ This included research and development (R&D) subsidies and subsidies "to promote adaptation of existing facilities to new environmental requirements imposed by law and/or regulations which result in greater constraints and financial burden on firms." SCM Agreement, *supra* note 91, art. 8 (footnote omitted).

²⁸⁶ See *supra* note 266 and accompanying text.

²⁸⁷ In 2005, Aguayo Ayala and Gallagher proposed that the SCM Agreement should contain a nonactionable "green light" category for subsidies which help "foster the shift toward cleaner production alternatives" as well as "payment for environmental services" performed by rural communities in developing countries. FRANCISCO AGUAYO AYALA & KEVIN P. GALLAGHER, PRESERVING POLICY SPACE FOR SUSTAINABLE DEVELOPMENT 2–3 (2005). In 2006, Green proposed replacing the original nonactionable category, which he also viewed as too narrow, with a "broadly defined" exception for subsidies related to environmental protection. Subsidies which fell under this broader exception would be subject to a necessity or least-restrictive-means test as well as a test along the lines of the GATT Article XX chapeau. Green, *supra* note 281, at 408–10.

Howse has argued that the safe harbor of "non-actionab[le]" subsidies could be revived with the following changes: permissible subsidies should be tied to policies listed in a multilateral agreement (for example, the Kyoto Protocol's successor), "contribute to the goals of the Kyoto Protocol" (based on "available evidence and sound scientific and economic principles"), and be consistent with the principles of nondiscrimination and transparency. HOWSE, *supra* note 269, at 21. Epps and Green, however, have subsequently claimed that Howse's proposal may be politically infeasible. In their book, they advance Green's earlier proposal for inclusion of a broad environmental exception for subsidies. They clarify that the safe harbor should be for subsidies designed "to encourage and provide incentives for certain actions" and "to encourage other aspects (such as implementation of new technology) where first-best instruments such as pricing are not politically feasible." Moreover, they go a step further and suggest that countries include a schedule for environmental subsidies, which would then be reduced, along the lines of what is done in the Agreement on Agriculture. TRACEY EPPS & ANDREW GREEN, RECONCILING TRADE AND CLIMATE 256–57 (2010). More recently, Rubini has also suggested that legal reforms be carried out to legitimate certain environmental subsidies, with criteria modeled upon the EU's state aid scheme. Rubini, *supra* note 14, at 570–77.

Despite a mandate coming out of the Doha Ministerial to entertain such proposals,²⁸⁸ little headway has been made in the negotiations.

The second perspective is an instrumentalist view that what matters in trade law are not legal exceptions or balancing tests but, rather, the actual tariff lines and schedules for environmental goods. At the end of the day, this group argues, trade law fosters environmental progress when it facilitates the global flow of environmental goods at low tariff rates.²⁸⁹ Thus, this camp pushes for the reduction of tariff rates on environmental goods through a sector-based agreement. How would this be accomplished? The WTO permits the negotiation of stand-alone, sector-specific treaties for which countries can opt in. An example often held up as a model is the Information Technology Agreement (ITA), which lowered tariffs on a series of information technology goods (e.g., electronics and semiconductors).²⁹⁰ The idea is to negotiate a similar treaty for environmental goods, i.e., a Clean Technology Agreement. The Doha Ministerial Declaration explicitly called for such negotiations,²⁹¹ and in recent years the idea has gained renewed traction among academics.²⁹² However, little headway has been made in such negotiations; countries continue to disagree on the most basic question of what qualifies as an environmental good.²⁹³

The “environmental safe harbor” approach and the “Clean Technology Agreement” approach are not mutually exclusive. Both predate the Next

²⁸⁸ During the Doha Ministerial, WTO members agreed to language stating they would entertain proposals for the reintroduction of an exempt category of “green light” subsidies in the SCM Agreement. That language made specific reference to subsidies with “legitimate development goals,” such as support for “development and implementation of environmentally sound methods of production.” See WTO, Implementation-Related Issues and Concerns, Decision of 14 November 2001, ¶ 10.2, WT/MIN(01)/DEC/17 (Nov. 20, 2001), 41 I.L.M. 757 (2002).

²⁸⁹ See, e.g., EPPS & GREEN, *supra* note 287, at 235–36; WORLD BANK, INTERNATIONAL TRADE AND CLIMATE CHANGE 73–95 (2008); WTO-UNEP, TRADE AND CLIMATE CHANGE 80–83 (2009).

²⁹⁰ See WTO, Ministerial Declaration on Trade in Information Technology Products, WT/MIN(96)/16 (Dec. 13, 1996), 36 I.L.M. 375, 383 (1997).

²⁹¹ WTO, Ministerial Declaration of 14 November 2001, ¶ 31(iii), WT/MIN(01)/DEC/1 (Nov. 20, 2001), 41 I.L.M. 746, 751 (2002) [hereinafter Doha Declaration] (calling for “the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services”).

²⁹² See, e.g., Matthew J. Slaughter, Op-Ed., *How to Avoid a Wind and Solar Trade War*, WALL ST. J., Mar. 13, 2012, at A13. Some have gone even further and called for such a treaty to address services and/or nontariff barriers as well. See, e.g., ARUNABHA GHOSH WITH HIMANI GANGANIA, GOVERNING CLEAN ENERGY SUBSIDIES: WHAT, WHY, AND HOW LEGAL? 43 (2012); Cottier et al., *supra* note 281; Robert Howse & Petrus B. van Bork, *Options for Liberalising Trade in Environmental Goods in the Doha Round* 21 (ICTSD Issue Paper No. 2, 2006).

²⁹³ As of September 2010, six different proposals have been submitted by various sets of WTO members which cover over 500 different products. However, the amount of overlap between these proposals is not high, with only seven goods making their way onto at least four proposals. See Vesile Kulaçoğlu, Contribution of Trade Opening to Access to Climate-Friendly Goods and Services, Presentation to WTO Side Event at COP 16, 19–21 (Dec. 8, 2010), http://www.wto.org/english/tratop_e/envir_e/wksp10_climate_change_e/cancun_side_event_goods_e.ppt.

Generation cases, but each is enjoying renewed interest in light of the recent disputes. Yet, the rise of green industrial policy diminishes the likelihood of success of either approach.

As emerging powers embrace green industrial policies, the odds that all parties can agree on the scope of an exemption decreases. Developed countries have become increasingly wary of a broadly worded environmental safe harbor, fearing it would limit their ability to take action against protectionist measures cloaked in green garb. Moreover, as labor unions recognize the utility of unilateral trade remedies cases, they will place increasing political pressure on governments not to circumscribe their ability to bring CVD cases by agreeing to any form of a safe harbor. Meanwhile, Chinese and Indian negotiators face the opposite pressure. If they agree to too narrow of a safe harbor provision that does not cover some of their own subsidies policies, they will face political criticism for having given their trading partners a legal exception without having secured one for their own policies. Within their polity, these policies are viewed not as trade distortionary, but as necessary for ensuring their country's sustainable development.

In addition, the rise of green industrial policies also negatively impacts the negotiation of a Clean Technology Agreement. Such policies have increased the competitiveness of developing countries in "core" goods.²⁹⁴ As a result, industrialized countries have sought to expand the deal to include "non-core" environmental goods,²⁹⁵ but most developing countries are suspicious. They consider the industrialized countries' proposal a backdoor ploy to gain concessions for industrial goods rather than motivated by any true environmental concern.²⁹⁶ Meanwhile, developing countries continue to demand special treatment, technology transfer, and financial assistance.²⁹⁷ Developed countries remain wary of such demands,

²⁹⁴ For example, China now dominates the market for solar panels. See Kevin Bullis, *The Chinese Solar Machine*, MIT TECH. REV., Jan.–Feb. 2012, at 46; Stephen Lacey, *How China Dominates Solar Power*, GUARDIAN (Sept. 12, 2011, 9:10 AM), <http://www.theguardian.com/environment/2011/sep/12/how-china-dominates-solar-power>.

²⁹⁵ For example, hybrid cars and energy-saving elevators are among the products listed in proposals put forth by developed countries. For a summary list of the products advanced in such proposals, see WTO Comm. on Trade & Env't, Special Session, *Report by the Chairman, Ambassador Manuel A.J. Teehanke, to the Trade Negotiations Committee for the Purpose of the TNC Stocktaking Exercise*, TN/TE/19 (Mar. 22, 2010).

²⁹⁶ An Indian trade official asked why, if the broad list of environmentally preferable goods is truly meant to be inclusive, do developed countries resist including on the list of noncore goods items such as seed varieties that use less energy and are less carbon intensive, but which benefit primarily producers in developing, rather than industrialized, countries? Interview with Indian Government Official (2012-G1).

²⁹⁷ See INT'L CTR. FOR TRADE & SUSTAINABLE DEV., LIBERALIZATION OF CLIMATE-FRIENDLY ENVIRONMENTAL GOODS: ISSUES FOR SMALL DEVELOPING COUNTRIES (2009); Mahesh Sugathan,

especially when they may be coupled with green industrial policies. In addition, developed and developing countries continue to disagree over how to implement tariff reductions. The odds of any agreement diminish as the effects of green industrial policies take hold.

B. Do Environmental Interests Really Lose in Next Generation WTO Cases?

If neither of the commonly espoused reform proposals is feasible, then what are the practical implications? Just how costly is the failure to reform WTO law to accommodate environmental measures in the Next Generation cases? A WTO ruling against a green industrial policy triggers a welfare gain, by requiring that a rent-seeking protectionist policy be eliminated. But it may also trigger a welfare loss, by requiring concurrent abandonment of a welfare-positive environmental policy. The importance of reform turns on one's assumptions about the size of the former versus the latter.

In this section, we argue that the expected welfare loss to the environment from unfavorable WTO rulings is likely to be much lower than feared. The explanation for this surprising result lies in the severable nature of the challenged green industrial policies. In the Classic disputes, the protectionist element is integral to the success and efficacy of the pro-environmental policy. Without the alleged discriminatory element—market access restriction—the environmental policy loses much of its teeth. To hold that the United States cannot ban shrimp imports on the basis of how they are caught or that the EU cannot impose different taxes on flights on the basis of their carbon emissions eliminates the very purpose of the policy. While the Classic cases may permit the use of less-trade-restrictive alternatives, the positive environmental impact is often seriously reduced with the substitution of the alternative instrument.²⁹⁸ Ruling against the protectionist element in Classic cases therefore deals a serious blow to the pro-environmental interest.

This is much less likely in the Next Generation disputes. In most of these disputes, the protectionist element of the policy is not integral to the implementation of the pro-environmental policy. Canada, Greece, Italy, or India could implement a feed-in-tariff regime without local-content requirements, as Germany and others have done.²⁹⁹ Similarly, China or the United States could restructure and scale back its solar subsidies to

WTO Negotiations on Environmental Goods: Ensuring a Meaningful Outcome for Developing Countries, 1 INT'L TRADE F. 32 (2010), available at <http://www.tradeforum.org/WTO-Negotiations-on-Environmental-Goods-Ensuring-a-Meaningful-Outcome-for-Developing-Countries>.

²⁹⁸ For example, the Classic cases have endorsed the use of labeling requirements as a permissible alternative to an import ban. But the environmental impact of a label is much lower than that of an outright ban. See James Salzman, *Informing the Green Consumer: The Debate over the Use and Abuse of Environmental Labels*, J. INDUS. ECOLOGY, Apr. 1997, at 11.

²⁹⁹ See *supra* notes 79–81 and accompanying text.

minimize the adverse effect on foreign producers. And China could implement a production quota or tax, rather than an export quota or tax, to limit the environmental harm caused by extracting minerals. In other words, in the Next Generation cases, one can preserve the environmental benefits of a policy while discarding its protectionist harms.

A country whose green industrial policy is found to have violated WTO rules has one of three options: First, it can sever the trade-problematic, industrial policy element but continue with the rest of the pro-environmental policy. Second, it can try to find another way to retain both the industrial policy objectives and the environmental objectives of its policy by looking for another mechanism to implement its policy that is in compliance with its trade obligations. This can be achieved by identifying potential inconsistencies and/or loopholes in facets of WTO law. Granted, this alternative may be less effective or politically difficult to implement, which is why it was not pursued in the first place. However, it may provide a second-best alternative. Third, it can drop the offending policy altogether, with both the trade-problematic, industrial policy element and the environmentally favorable element disappearing. Any of these three options will bring the country in line with its WTO obligations. Trade law does not require, or favor, any one of these options.³⁰⁰

Note that from the offending government's standpoint, none of the three compliance options was preferable to the trade-illegal policy. Each results in higher fiscal costs and/or lower benefits for its domestic industrial sectors. But with the threat of retaliatory sanctions now imminent, governments must decide whether they are willing to bear the additional cost of sacrificing another sector's interests for the sake of maintaining their green industrial policy.³⁰¹ To date, most governments, given their political economy constraints, are not willing to do so. Instead, they have been forced to choose between the second-best alternatives in order to avoid trade sanctions.

To illustrate, consider a case where the WTO declares Country *A*'s pro-environmental local-content subsidy illegal. The sector enjoying the subsidies will lobby against trimming them, but other sectors against whom retaliatory sanctions are threatened will lobby for the government to bring its subsidy policy into compliance to avoid being hurt. The government of the losing country faces three basic options: First, it can sever and drop the local-content requirement but continue providing the subsidy. This option sacrifices the industrial policy objective, but preserves the environmental

³⁰⁰ Understanding on Rules and Procedures Governing the Settlement of Disputes, *supra* note 156, art. 19 (footnote omitted) (noting that the panel or Appellate Body "may" but is not required to "suggest ways in which the Member concerned could implement the recommendations" that "the Member concerned bring the measure into conformity with that agreement").

³⁰¹ If the government does not drop the offending policy "within a reasonable period of time," WTO rules allow the complainant to suspend concessions. *Id.* art. 22.

objective. Second, it can find a legal work-around solution. For example, the country may have fewer obligations for government procurement than subsidies; thus, it might shift away from using local-content subsidies toward using tendering procedures to benefit domestic producers in nascent renewable energy industries.³⁰² This option requires Country *A* to maintain its environmental objective without sacrificing its industrial policy. Third, it can drop the offending policy altogether. Both the industrial policy and environmental objectives are sacrificed.

Options for a WTO Member Following a Ruling Declaring a Green Industrial Policy Measure Illegal	Does the Environment Still Benefit?
1) Sever the industrial policy element but retain the overall environmental policy	Yes
2) Find a (second-best) alternative that retains both the industrial policy and the environmental objectives	Yes
3) Drop the entire policy, including both the industrial policy and the environmental elements	No

If we consider these three potential scenarios, it is important to recognize that *only the third of these results in an environmentally negative outcome*. Under both the first and second scenarios, the environmental benefits remain. The key question, then, is just how often will we see the third scenario emerge?

We suggest that the answer turns on a small set of factors. The first is whether a legal work-around solution exists. If not, then Option 2 is foreclosed. If so, then two additional considerations are the relative differences in cost and execution difficulty of the work-around solution. Presumably, both are higher, but the relevant question is the marginal difference of Option 2 as compared to Options 1 and/or 3. The second is the extent that the industrial policy has already accomplished its objectives or been judged an outright failure, in which case the policymakers may be more willing to abandon it. The fiscal position of the government also matters. Those facing tighter fiscal constraints would be more inclined to jettison costly environmental programs without offsetting economic gains. Finally, overall political economy considerations—the relative political

³⁰² For example, South Africa requires that bidders for the Department of Energy’s Independent Power Producer (IPP) Procurement Programme for Renewable Energy Projects adhere to certain local-content requirements; this was set at 28.5% for the first set of tenders for solar photovoltaics and 47.5% for the second set. See DELOITTE, THE MILLION JOBS QUESTION: LOCALISATION FOR RENEWABLES IN AFRICA 9 (2012).

strength and influence of the competing interest groups affected under each scenario—will clearly factor into the policymakers' decision calculus.

With these factors in mind, let us consider what has actually occurred in the Next Generation disputes decided to date. In *China-Wind Power Equipment*, China assumed the role of Country *A*, providing local-content subsidies to wind turbine manufacturers. After the United States filed its WTO case, China agreed to a settlement whereby it simply dropped the local-content requirement (i.e., Option 1).³⁰³ The subsidies continue, only now they take the form of a feed-in tariff and are available regardless of whether the local-content requirement is met.³⁰⁴ Although trade interests prevailed, the environmental benefits of large-scale wind power manufacturing continued.

What motivated China's actions? China's decision was driven primarily by the success of its industrial policy. Between 2006 and 2009, China more than doubled its wind turbine installations each year.³⁰⁵ The industrial policy, coupled with high demand, caused several foreign manufacturers to relocate their production to China and strengthened China's domestic production capabilities.³⁰⁶ By 2010, China had overtaken the United States to become the global leader in wind capacity.³⁰⁷ China could afford to drop the local-content requirement, confident that its domestic producers had become world-class leaders, thanks to its industrial policy.

In *China-Raw Materials*, where the WTO declared China's export restrictions on raw materials to be illegal, China again faces three options.³⁰⁸ The most obvious is to shift toward a production tax or quota. This retains the environmental benefit, while eliminating the trade distortion (Option 1). A second option is to remove the illegal tax and quota and replace them instead with an export licensing scheme which is permitted under WTO law. The licensing scheme, while not officially

³⁰³ Press Release, Office of the U.S. Trade Representative, *supra* note 165.

³⁰⁴ Paul Gipe, *China Launches Differentiated Wind Energy Tariffs*, RENEWABLEENERGYWORLD.COM (Sept. 2, 2009), <http://www.renewableenergyworld.com/rea/news/article/2009/09/china-launches-differentiated-wind-energy-tariffs>.

³⁰⁵ WORLD WIND ENERGY ASS'N, WORLD WIND ENERGY REPORT 2010, at 14 (2011).

³⁰⁶ Doug L. Hoffman, *Wind Turbine Industry Collapsing, Green Jobs Flee to China*, RESILIENT EARTH (Oct. 7, 2012, 4:18 PM), <http://theresilientearth.com/?q=content/wind-turbine-industry-collapsing-green-jobs-flee-china>; see also Tim Webb, *Closure of Turbine Factory Takes the Wind out of Britain's Low-Carbon Sails*, GUARDIAN, April 29, 2009, at 25 (describing closure of British plant with jobs shifted to China and the U.S.).

³⁰⁷ *China World's No. 1 in Installed Wind Power Capacity*, PEOPLE'S DAILY ONLINE (Jan. 14, 2011, 9:24 AM) <http://english.peopledaily.com.cn/90001/90778/90860/7260858.html>. China is expected to continue as the world's leader for the remainder of the decade. Tildy Bayar, *Despite Slowdown, China to Hold Wind Power Market Leadership to 2020*, RENEWABLEENERGYWORLD.COM (Aug. 19, 2013), <http://www.renewableenergyworld.com/rea/news/article/2013/08/despote-slowdown-china-to-hold-wind-power-market-leadership-to-2020>.

³⁰⁸ See *supra* notes 160–62 and accompanying text.

limiting exports, would allow China to control the pace of exportation; it therefore provides a legal work-around for China to maintain both its industrial policy and environmental objectives (Option 2). A third option, favored by foreign businesses, is to eliminate the export restrictions altogether, without imposing any production restrictions (Option 3). But this would result in the most environmental degradation because of the higher volumes of mining.

Of these three options, China appears to be most closely considering the second.³⁰⁹ This makes sense, because it allows China to best preserve its full range of policy objectives. This industrial policy, unlike the wind subsidies, was not designed to advantage and accelerate the growth of a single industry, and was instead meant to benefit a range of Chinese industries. So long as Chinese government guidance to a consolidated industry does not rise to the level of a de facto export restriction, Option 2 appears to be a viable work-around. But even if it is not, Option 1 (production tax or quota alone) is still likely more attractive than Option 3 (no restrictions). It provides policy levers for the government to control the strategic outflow of mineral resources and environmental degradation in a way that Option 3 does not.

Do other countries behave differently than China? Our analysis suggests they do not. Subsequent to the WTO ruling against Canada, Ontario announced that it would amend its feed-in-tariff program to drop the illegal local-content requirement (Option 1). Having already accomplished its industrial policy objective of securing investments and jobs, Ontario's Energy Minister expressed confidence that Ontario's clean energy manufacturing sector would remain resilient, despite the policy change.³¹⁰ Again, like *China-Wind Power Equipment*, the WTO ruling resulted in a victory for trade interests, but not at the expense of the environment.

Meanwhile, India is monitoring the *Canada-Renewable Energy* case closely because of similarities between its own program and Ontario's. One high-level Indian trade official remarked that, were the local-content requirements of India's program found illegal, it is highly unlikely that India would abandon the program altogether.³¹¹ Instead, India would also seek an alternative, WTO-compliant, work-around solution (Option 2). Already, India's lawyers are exploring such alternatives, even before a WTO challenge has been filed against it. Potential replacement solutions,

³⁰⁹ *China Cites Compliance with WTO Raw Materials Ruling*, METAL BULL. (Jan. 31, 2013, 10:45 AM), <http://www.metalbulletin.com/Article/3147874/China-cites-compliance-with-WTO-raw-materials-ruling.html>.

³¹⁰ *Ontario to Change Green Energy Law After WTO Ruling*, GLOBE & MAIL (May 29, 2013, 4:23 PM), <http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/ontario-to-change-green-energy-law-after-wto-ruling/article12236781>.

³¹¹ Interview with Indian Government Official (2012-G1), *supra* note 296.

in the event that the local-content requirement must be abandoned, include using WTO-consistent investment requirements or government procurement rules to continue fostering the development of the domestic solar industry.

Finally, in the ongoing *China-Rare Earths* case, China also began exploring an alternative, WTO-compliant, work-around solution (Option 2) before a negative ruling was issued against it. The eventual work-around solution will likely involve concentrating production in a handful of firms that can informally advantage domestic downstream producers.³¹² Again, even if a work-around solution proves untenable, China would likely still prefer a production restriction (Option 1) that severs the industrial policy component from the environmental component than an all-out abandonment of any restrictions on rare earths (Option 3) that results in greater environment harm.

In all of these cases, even if the defendant loses and the trade interests prevail (as most of the defendants expect will be the case, given the current state of the law), it is not at all clear that the WTO rulings will result in negative environmental consequences. In no instance do we see any signs that governments will abandon the pro-environmental policy altogether (Option 3) as a result of losing their cases. Instead, because of flexibility in other areas of WTO law, governments can find ways to implement the pro-environmental industrial policies through alternative channels. From the government's perspective, these work-around solutions may be second-best policies, with higher political difficulty of implementation and/or less effective results. But from an environmentalist's perspective, the environmental benefits are largely preserved, despite the original WTO-violating policy being abandoned.

The only instance where environmental interests clearly lose is Option 3, where the losing party in a WTO dispute abandons the policy altogether, jettisoning both the protectionist industrial policy element as well as its associated pro-environmental element. We suggest that this is most likely to be the case when an alternative legal work-around is not available, the policy itself is costly, governments face fiscal constraints, the industrial policy to date has been unsuccessful, and the major beneficiaries of a trade-compliant policy would be foreign producers. While such a situation is theoretically possible and may occasionally surface, our interviews with trade and environment policymakers suggest that it will be infrequent. To date, no government has taken such an approach in order to comply after losing a WTO trade and environment case.

While counterintuitive, a ruling against a green industrial policy in a Next Generation dispute is not likely to be environmentally harmful. Because the environmental and protectionist measures are severable, Next

³¹² Keith Bradsher, *China Consolidates Grip on Rare Earths*, N.Y. TIMES, Sept. 16, 2011, at B1.

Generation disputes are dramatically different than Classic cases. In a Next Generation dispute, a country can comply with a WTO ruling by simply eliminating the protectionist element of the policy or altering it to become WTO compliant, while leaving the pro-environmental elements in place. To date, governments have done just that. Thus, even though the existing state of the WTO law governing the Next Generation disputes may be unfavorable to environmental interests, the environmental harm from such cases has been much less than commonly feared.

C. But Unilateral Trade Remedies Cases Can Be Environmentally Harmful

Despite the surprisingly optimistic finding in the preceding section that green industrial policies challenged at the WTO are unlikely to place environmental benefits at risk, there is an important caveat to our analysis. One of the key implications highlighted in Part III is that Next Generation cases may be adjudicated in multiple fora. They need not take the exclusive form of WTO litigation, but may also surface through unilateral trade remedies proceedings. Five of the ongoing Next Generation disputes that we have discussed so far—the U.S. petition against Chinese solar panels; the EU petition against Chinese solar panels; the Chinese petition filed against U.S. and Korean polysilicon; the Indian petition against U.S., Chinese, Malaysian, and Taiwanese solar panels; and the U.S. petition against Chinese and Vietnamese wind turbines—fall squarely into this category.

Trade remedies cases differ dramatically from multilateral WTO cases in that they do not require that a losing party bring its policies into compliance with WTO law. Instead, if the complainant prevails, the government simply imposes higher tariffs unilaterally against the losing party until it can be shown that the injury caused by the dumping and/or subsidization no longer exists.

As a result, the options that a losing party has in a trade remedies case are dramatically different. It can:

- (1) accept the increased tariff and pay it, while passing on some, if not all, of the cost to downstream consumers;
- (2) stop exporting the product to the country imposing the unilateral tariffs in order to avoid paying the increased tariff;
- (3) try to raise the price of its products so that it is no longer found to be “dumping” or injuring domestic competitors as a result of the subsidies received,³¹³ or

³¹³ Note that in the instance of subsidies, theoretically, the losing party could also lobby the government to eliminate the subsidies, but this does not happen as it would be against the party’s interest. Article 19.4 of the SCM Agreement prevents the levying of a CVD “in excess of the amount of the subsidy found,” so there is unlikely to be a scenario in which the cost of the CVD will exceed the benefit of the subsidy for the party receiving the subsidy. *See* SCM Agreement, *supra* note 91, art. 19.4.

- (4) move production to a costlier location elsewhere to avoid the increased tariff, while passing on some, if not all, of the increased cost to downstream consumers.

Unlike the options available under the multilateral WTO dispute settlement channel, *all four* of these options are environmentally harmful. The first, third, and fourth options result in higher prices for environmental goods. The second option results in decreased consumer choice for lower priced environmental goods. All will result in slower consumer uptake of renewable energy products, with the exact impact depending on the consumer elasticity for the good.

One might think that the solution is to lower tariffs on environmental goods, so as to offset the tariff increases associated with unilateral trade remedies. Following the U.S. decision to impose unilateral antidumping duties on Chinese solar panels, several individuals responded with a call to reform WTO law by negotiating a Clean Technology Agreement.³¹⁴ But this misses the point. Adoption of a sector-based environmental goods agreement has absolutely no bearing on the level of environmental harm stemming from unilateral trade remedies.

To illustrate this point, suppose current U.S. tariffs on solar panels are set at 10%. A new Clean Technology Agreement is reached and entirely eliminates tariffs on solar panels. Without any unilateral trade remedies, this decrease in tariff levels by 10% is environmentally favorable, increasing access to and competition among environmental goods. Following an antidumping or CVD ruling, however, the adjudicator determines the *absolute* tariff level necessary to offset the injury from the harm caused by the dumping or subsidization. Suppose that the adjudicator determined that the tariff level required to remedy the injury was 250% (as the U.S. Department of Commerce recently ruled regarding the Chinese solar panels).³¹⁵ Regardless of whether a Clean Technology Agreement is in place or not, we arrive at the same outcome—a tariff of 250% on Chinese solar panels. Thus, the existence of a Clean Technology Agreement only alters the amount of the marginal increase (240% versus 250%); the absolute tariff is the same under either scenario.

In most other instances outside of the environmental context, when faced with increased tariffs due to trade remedies, the losing party has moved production or simply paid the higher tariff and then passed on a percentage (if not most) of the cost increase to consumers. Reports suggest that this will also be the case with the Chinese solar panel manufacturers, who to date have been the only losing party in such an environmental trade dispute. This, in turn, will raise the cost of solar panel installations for

³¹⁴ See, e.g., Slaughter, *supra* note 292; cf. MATTHEW STEPP & ROBERT D. ATKINSON, GREEN MERCANTILISM: THREAT TO THE CLEAN ENERGY ECONOMY 21 (2012).

³¹⁵ See *supra* note 189 and accompanying text.

American consumers and slow the rate of solar power adoption by American households.³¹⁶

Thus, the forum for Next Generation disputes matters significantly. If the dispute is adjudicated through multilateral dispute settlement, then the losing party has several options to comply with the WTO ruling. The two most favored policy options to date also preserve the environmental benefits of the illegal industrial policy. In contrast, if the dispute takes the form of a trade remedies case to be adjudicated in domestic administrative courts, then all of the options available to the losing party will result in some form of harm to environmental interests—either through higher prices or decreased consumer choice of low-cost environmental goods.

D. Pro-environmental Reform Proposals for Trade Remedies

If environmentalists are serious about potential harm from the rising tide of Next Generation cases, then they need to focus on trade remedies cases. We offer a series of four proposals below for consideration. As far as we are aware, such proposals have not been brought forward nor have they been discussed in the WTO Rules negotiations.

Before discussing our proposals, we note that one obvious solution would be to require WTO members to agree to submit all disputes on environmental goods through the multilateral WTO dispute settlement mechanism. In essence, countries would agree on a temporary ceasefire on the use of unilateral trade remedies against each other. In other areas of international trade, WTO members have agreed to similar ceasefire arrangements through implementation of a “peace clause” in the agreements.³¹⁷ Regardless of whether one is sympathetic to such an idea, we think that it is politically unrealistic. The United States and several other countries are determined to maintain the option of unilateral trade remedies.³¹⁸ Trade remedies offer a much faster, more direct, and more politically popular means of response to unfair industrial policies compared to WTO disputes. This is important to governments concerned that Chinese

³¹⁶ Steven Cohen, *Stop the Solar Trade War*, HUFFINGTON POST (Dec. 19, 2011, 8:41 AM), http://www.huffingtonpost.com/steven-cohen/stop-the-solar-trade-war_b_1157573.html (“[G]etting into a trade war with China will probably increase the price of solar power in the short term. This price rise would take place at the worst possible time If your goal was to kill solar power in the United States, this might be a good way to start.”); Martin Green, *A Solar Trade War Could Put Us All in the Dark*, MIT TECH. REV. (Dec. 19, 2011), <http://www.technologyreview.com/news/426392/a-solar-trade-war-could-put-us-all-in-the-dark>.

³¹⁷ *E.g.*, Agreement on Agriculture art. 13, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 U.N.T.S. 410.

³¹⁸ *See* Bipartisan Trade Promotion Authority Act, 19 U.S.C. § 3802(a)(14) (2006) (“The principal negotiating objectives of the United States with respect to trade remedy laws are—(A) to preserve the ability of the United States to enforce rigorously its trade laws, including the antidumping, countervailing duty, and safeguard laws, and avoid agreements that lessen the effectiveness of domestic and international disciplines on unfair trade, especially dumping and subsidies”).

(and potentially others') policies are quickly eroding the competitiveness of their domestic industries and determined to stop the outsourcing of manufacturing of renewable energy products. If a formal "peace clause" or an informal truce is not in the range of realistic possibilities, what are other solutions?

The main cost of unilateral trade remedies from an environmental standpoint is the fact that they result in higher costs for the environmental good on which tariffs are imposed (e.g., solar panels), since a portion of the cost of higher tariffs is passed directly to consumers. Our first proposal seeks to address this cost directly. Governments, before imposing a trade remedy, could be required to undertake an economic analysis of the effect of the proposed tariff increase on prices. They would also estimate the amount of additional tariff revenue that the trade remedy would bring in. Based on this analysis, the government would designate a portion of the additional tariff revenue into a fund that provides rebates to consumers of the product on which a trade remedy has been imposed. Negotiators can decide whether the precise proportion should be calculated as a percentage of tariff revenue or of the expected price increase, and whether it is to be given prospectively or retrospectively.

For example, suppose the American version of a solar panel cost 30% more than a Chinese version. Suppose also that a U.S. trade remedy case resulted in an additional 100% tariff imposed against Chinese imports. Assuming the entire cost of the punitive tariff is passed on to consumers, Chinese solar panels will now cost 54% more than American-made ones.³¹⁹ This benefits American manufacturers. But environmental interests are hurt by the trade remedy because the lowest priced alternative after the trade remedy is imposed is now 30% more expensive. Assuming some price elasticity in the demand curve, uptake of solar conversions is likely to slow.

However, our proposal would require U.S. authorities to give some proportion of the increased tariff revenues from trade remedies back to consumers who buy solar panels manufactured by *any* country's producer.³²⁰ Suppose after the economic analysis is performed, this rebate is set at 15% of the purchase price. Regardless of what countries' panels they

³¹⁹ To illustrate this, assume the price of Chinese solar panels prior to the imposition of antidumping duties is \$100. The price of the corresponding American solar panel would then be \$130. Following the imposition of a 100% duty on Chinese panels, assuming the cost is passed on to consumers, the price of a Chinese panel is now \$200 (i.e., $100 + (100\% \times 100)$). Provided the American panel's price remains the same, the Chinese panel is now 54% more expensive (i.e., $(200 - 130) / 130$).

³²⁰ To do otherwise would trigger a violation of the most-favored-nation and/or national treatment requirements. See GATT, *supra* note 12, arts. I, III. Note that the Appellate Body has previously found that duties collected from trade remedy measures cannot be redistributed to affected domestic producers. See Appellate Body, *United States—Continued Dumping and Subsidy Offset Act of 2000*, WT/DS217/AB/R (Jan. 16, 2003). The proposal therefore calls for the funds to be given to consumers in a scenario where they can continue to spend the funds on the imported product.

purchase (American, Chinese, or other), consumers are now eligible for a 15% rebate. The environmental harm is mitigated, although not eliminated, as the lowest price alternative is now only slightly more than 10% more expensive than it was prior to the trade remedy. Assuming price is a major factor driving consumer purchases, consumption should shift away from Chinese imports toward American-made panels. The rebate, therefore, would mitigate environmental fallout while benefitting primarily domestic producers.

This proposal allows for two competing goals to be met. On the one hand, as a result of the higher tariff, the foreign producer loses the cost advantage that it had over the domestic producer due to its allegedly unfair trade practice. If consumers continue to favor the foreign product, it is on account of nonprice factors (e.g., quality, design) rather than price advantages accruing from “dumping” or subsidization. On the other hand, consumers are not forced to bear the brunt of the cost of the trade remedy. A portion of the increased cost will be refunded directly to them, thanks to the rebate scheme. Unfair trade practice concerns are accommodated, while the negative environmental impact is mitigated.

Unlike other reform proposals, we do not anticipate that ours will face serious political economy constraints. By raising demand, the rebate helps both domestic producers and downstream suppliers, two groups that have otherwise been at loggerheads in the trade remedies cases. In addition, both labor and environmental groups could support such a proposal; the rebates trigger more installation jobs and greater adoption of renewable technology. Moreover, the proposal is self-financing; funding for the rebates is based on projections of duties collected.

A second possibility is to limit the number of trade remedies that may be applied to environmental goods simultaneously. For example, WTO members might agree on a decision that sets the limit at no more than three simultaneous trade remedy measures on environmental goods. This preserves the flexibility of countries to take action against dumping or unfair subsidization as they see fit. It also allows countries to retain the option to take action in truly harmful situations, involving predatory pricing.³²¹ But it will prevent them from abusing this flexibility to enact a large swath of trade remedies simply for the sake of protecting domestic renewable energy industries by keeping prices of environmentally beneficial foreign products artificially high.³²² In addition, with a cap, a government will need to carefully consider whether a particular case or

³²¹ Empirical analysis suggests that such instances are rare. *See, e.g.*, PATRICK A. MESSERLIN, MEASURING THE COST OF PROTECTION IN EUROPE 354–59 (2001) (limited to less than 2% of EU cases).

³²² Such potential abuse is most prominent in the antidumping context, on account of its permissible calculation methodologies. *See, e.g.*, BRINK LINDSEY & DANIEL J. IKENSON, ANTIDUMPING EXPOSED 19–24 (2003).

product is important enough for it to use up one of its allotments, instead of taking measures on close to every case filed by domestic producers. Finally, the cap will induce the sunset of certain long-standing trade remedies in order to make room for more recent ones.

Indeed, one of the dangers of trade remedies is that the high tariff rates imposed from such cases are allowed to continue for long periods of time. WTO law places no limits on how long antidumping duties and CVDs can be maintained, so long as they are reviewed every five years and the investigating authorities determine that injury would result from their termination.³²³ The loose legal standard governing these sunset reviews allows for governments to maintain trade remedies for long periods. For example, the United States has antidumping duties dating back to the Reagan Administration,³²⁴ and the EU has antidumping measures dating back to 1990.³²⁵

A third and related idea is to place a strict time limit on how long trade remedies may be maintained for environmental goods. For example, the WTO Safeguards Agreement allows for safeguards to be maintained for only three years before compensation must be paid.³²⁶ WTO members could decide to place a similar time limit on the imposition of trade remedies against environmental goods. This proposal recognizes the fact that in imposing a tariff following a trade remedies case, a government wants to grant its domestic industries sufficient time to recover from the effects of their competitor's "dumping" or subsidization. However, setting a time limit ensures any environmental cost is limited to the near term.

A fourth and final proposal is to place an upper bound on the size of the additional tariff that may be imposed in a trade remedies case. This is likely to be controversial because it runs against the principle that governments should always be allowed to impose trade remedies at a level high enough to sufficiently remedy the injury caused by the "dumping" or subsidization.³²⁷ This would prevent a sudden shock of the sort that is expected when solar panel prices rise sharply in the United States following the imposition of preliminary antidumping duties of up to 250%. Already, experts are forecasting a major decrease in new solar installations in the

³²³ See *supra* note 182 and accompanying text; WTO Antidumping Agreement, *supra* note 273, art. 11.

³²⁴ WTO Comm. on Anti-dumping Practices, *Semi-annual Report Under Article 16.4 of the Agreement—United States*, 46–53, G/ADP/N/223/USA (Apr. 3, 2012).

³²⁵ WTO Comm. on Anti-dumping Practices, *Semi-annual Report Under Article 16.4 of the Agreement—European Union*, 20, G/ADP/N/223/EU (Apr. 20, 2012).

³²⁶ Agreement on Safeguards art. 8, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1869 U.N.T.S. 154.

³²⁷ See WTO Antidumping Agreement, *supra* note 273, art. 9.1; SCM Agreement, *supra* note 91, art. 19.

United States as an expected casualty of these unilateral tariffs.³²⁸ If the upper bound were set at 50%, for example, the impact of this shock would be lessened for the environment, but the strong message to Chinese manufacturers would still be clear.

Any or all of these proposals can be implemented unilaterally or through a decision of the WTO itself, along the lines of the paragraph six solution to the TRIPS Agreement.³²⁹ Thus, a formal amendment to the WTO Agreement on Antidumping (ADA) or the SCM Agreement is not necessary, although the amendment process does represent an alternate means of implementation.

Given the practical impediments that make other reform proposals difficult, why do we think that ours will fare any better? Every WTO member faces the threat that another country may employ trade remedies against its producers. Each recognizes that this behavior, left unchecked, can lead to a degenerative tit-for-tat trade war in which all sides would be hurt. Thus, each side benefits from proposals, such as those that we have advanced, that place limits on behavior and therefore decrease the odds of a trade war. However, none of the proposals require any WTO member to disarm. Each still retains the option of employing a trade remedy, if necessary, under certain circumstances. To use a nuclear weapons analogy, the proposal simply places limits on the number and types of warheads that each side may use, but does not ban them altogether. It is essentially an “arms control” agreement for preventing an environmental trade war that could infect other trade areas, too. The political cost of engaging in such an agreement is much lower than one that requires giving up some policy instrument permanently (such as tariffs in a Clean Technology Agreement or litigation with the reintroduction of an environmental exception in the SCM Agreement).³³⁰

What about the feasibility of the proposals from a domestic political economy perspective? One might suppose that our proposals set up the classic trade policy scenario of pitting competitive export-oriented sectors against floundering domestic-oriented sectors. Certainly, this dynamic holds true in those countries where domestic renewable sectors have fallen behind and globally competitive exporters have yet to emerge in renewable energy (e.g., India). But it is not the dominant model, at least not yet. In the major trading powers (e.g., the United States, EU, China, Japan), the traditional dynamic has yet to take hold. Instead, the affected domestic industries harbor both offensive and defensive concerns—i.e., wanting their

³²⁸ Paul Ausick, *U.S. Solar Installations Will Drop in 2013*, 24/7 WALL ST. (Sept. 10, 2012, 12:49 PM), <http://247wallst.com/2012/09/10/u-s-solar-installations-will-drop-in-2013-fslr-spwr-tsl-stp-ldk-jaso-yge-csiq>.

³²⁹ WTO General Council, Implementation of Paragraph 6 of the Doha Declaration on the TRIPS Agreement and Public Health, WT/L/540 (Sept. 1, 2003), 43 I.L.M. 509 (2004).

³³⁰ See *supra* note 266 and accompanying text.

government to ensure continued market entry abroad while maintaining flexibility to protect markets at home—and are enmeshed in complex supply chains. Thus, the industry sectors that are affected are more likely to be open to proposals that limit, but do not eliminate, the government's ability to impose trade remedies. The domestic political economy cost of championing such proposals is likely to be much lower in this arena than it would be in others, such as agricultural goods, where the domestic divisions are more hardened.³³¹ So long as the market dynamics remain fairly fluid, a window of opportunity for our reforms persists.

If the environmental community is serious about trying to mitigate the negative impacts from Next Generation cases, then their focus should be on trade remedies. We have suggested four potential strategies to constrain the WTO rules governing trade remedies to prevent such cases from triggering a degenerative green trade war. Each has potential downsides, but additional constraints would go a long way toward preventing Next Generation trade remedies conflicts from undoing the progress made in advancing renewable energy solutions to our environmental problems.

CONCLUSION

A fundamental shift is occurring in the nature of cross-border conflicts implicating trade and environmental concerns. Yet, it is one that the public at large appears to be missing. While many assume that China, India, and other developing countries are dragging their feet on implementing environmental policies, these countries, along with some developed countries, are actually deploying traditional industrial policies to spark their renewable energy sectors and capture these nascent markets. Although the first-order motivation for these policies may be job creation and economic development, they are nevertheless positive for the environment. However, these policies have led to a series of trade conflicts because the instruments deployed to execute the industrial policy often violate WTO rules. By framing these recent conflicts within the conceptual category of Next Generation cases and highlighting the contrast with the Classic trade and environment cases, we have sought to shed light on the messier legal and political dynamics of these emergent cases.

The Next Generation cases, at first glance, appear to trigger negative environmental consequences. They have threatened the pro-environmental coalition of the earlier Classic cases concerning endangered species and air

³³¹ Governments have needed to expend considerable political capital if they are to overcome the entrenched domestic opposition to trade concessions on agriculture. *See, e.g.,* TIMOTHY JOSLING, AGRICULTURAL TRADE POLICY: COMPLETING THE REFORM 2–3 (1998) (discussing this dynamic in the context of the Uruguay Round); 'Sanctuary' Safe in TPP Talks, *Abe Assures the Diet*, JAPAN TIMES (Oct. 17, 2013), <http://www.japantimes.co.jp/news/2013/10/17/business/sanctuary-safe-in-tpp-talks-abe-assures-the-diet> (discussing the significant challenges confronting Japan as it negotiates the Trans-Pacific Partnership).

quality. Labor unions lobby hard against foreign pro-environmental industrial policies when they threaten to steal domestic jobs. Producer interests have split. Meanwhile, environmental groups have stayed largely silent. And the applicable law in many of these cases no longer even considers environmental interests. This is as true of the subsidies-related cases at the WTO as the trade remedies cases filed domestically. Under such circumstances, so long as the policy violates the trade discipline, it is deemed illegal, no matter how large or valid the competing environmental concern. Although many of these cases are still ongoing, the ones that have resulted in rulings so far have all been against the trade-problematic, but pro-environmental, policies.

This broad shift in the dynamics of the trade and environment disputes has escaped the attention of many. For the few that have noticed, however, the shift has provoked alarm, leading to calls for legal reforms of WTO law to help mitigate the environmental fallout from the rulings against these pro-environmental policies. We have shown that this fear is overblown, at least with respect to WTO cases. In green industrial policy cases, unlike the earlier Classic cases, the environmental element is not at the core of the policy deemed illegal. Our analysis suggests that governments, in responding to these negative rulings, either find legal work-around solutions or sever only the quasi-protectionist elements, keeping the environmental benefits in place. Meanwhile, these rulings have welfare-positive effects in that they lessen the rent-seeking behavior embedded within the industrial policy. Just because trade wins doesn't mean that environment loses.

At the same time, this trend is not true across the board. A very different dynamic is at work in domestic trade remedies cases that lead to the imposition of unilateral tariffs against environmental goods. Here, environmental interests lose due to the higher cost and/or lower consumer choice for environmental goods that result from such cases. As a result, efforts to reform legal rules to mitigate the environmental damage from the rise of green industrial policy disputes should focus on the narrow task of reforming the WTO's trade remedies rules.

In a world where climate change negotiations are faltering and a treaty seems a distant hope, green industrial policy has emerged as one of the most important areas for real progress. Litigation of this new class of trade and environment disputes and the rules shaping the race toward a renewable energy future have become an important part of the global climate regime. How these rules are determined will play an important role in charting the path toward a sustainable future.