Renewable Energy Subsidies and the GATT

Virginia R. Hildreth

Follow this and additional works at: https://chicagounbound.uchicago.edu/cjil

Recommended Citation
Available at: https://chicagounbound.uchicago.edu/cjil/vol14/iss2/10

This Article is brought to you for free and open access by Chicago Unbound. It has been accepted for inclusion in Chicago Journal of International Law by an authorized editor of Chicago Unbound. For more information, please contact unbound@law.uchicago.edu.
Renewable Energy Subsidies and the GATT  
Virginia R. Hildreth*

Abstract

Renewable energy is an increasingly important topic in today's global world and marketplace. This Comment analyzes the current World Trade Organization plan for addressing renewable energy and proposes an alternate solution to that plan modeled on the Agreement on Agriculture. This Comment notes how, with the present lack of a specific WTO agreement on renewable energy, these subsidies must be treated like all other industrial subsidies, despite their environmental benefits. Current WTO exceptions for environmentally beneficial programs require relatively pure environmental motives in order to be exempt, and thus do not embrace subsidies with a developmental focus. This Comment specifically addresses how this approach negatively impacts the ability of developing countries in particular to both meet their energy demands and act in an environmentally conscious way, as the current approach requires pure environmental motives without. The proposed renewable energy agreement is modeled on the Agreement on Agriculture, with different levels of permissibility that balance a program's benefit to the environment with its anticompetitive effects.

Table of Contents

I. Introduction ........................................................................................................... 704
II. The Emergence of Renewable Energy Industries ........................................... 704
   A. Chinese Support of Renewable Energy......................................................... 705
   B. The United States and Renewable Energy.................................................... 706
III. The Legal Landscape .......................................................................................... 709
   A. Agreement on Subsidies and Countervailing Measures............................. 710
   B. Article XX...................................................................................................... 712

* The University of Chicago Law School, J.D. Candidate, 2014. The author would like to thank Charles Lei and the CJIL board and staff for their contributions.
IV. Analysis of Renewable Energy Subsidies in the Current WTO Framework

A. Feed-In Tariffs .......................................................... 715
B. Solar Panels ............................................................. 716
C. General Article XX Analysis ........................................ 720

V. Creating a Model for Renewable Energy Based on the Agreement on
Agriculture ................................................................. 722

A. The Agreement on Agriculture .................................... 722
   1. The box classifications ............................................ 723
   2. The Agreement on Agriculture does not apply to renewaible energy... 725
B. A Renewable Energy Model ......................................... 726
   1. A comparison of the agricultural and renewable energy industries..... 726
   2. A renewable energy box method .................................. 727
C. Barriers to an Agreement ............................................ 727

VI. Conclusion ............................................................... 728
I. INTRODUCTION

In a world of limited resources, renewable energy is increasingly important on the global stage. Developing countries, such as China, have increased their investment in renewable energy technology in order to reduce their dependence on fossil fuels and advance their economies. More developed countries, such as the United States, are also interested in this sector for reasons that include environmental issues, job creation, and energy independence. While there is private involvement in these industries, government support can be necessary for realizing such large-scale investments. Moreover, as countries become financially involved with the private sector actors in these industries, their governments’ support thereof can implicate international agreements on free trade. The fact that current international trade law does not have a tailored treatment for renewable energy creates difficulties when countries look to invest in these technologies. Importantly, developing countries suffer the greatest difficulties under the current scheme because of international law’s focus on encouraging principles of free trade and therefore only permitting subsidization of programs whose sole focus is environmental preservation. China’s creation of various renewable energy programs shows the inherent conflict between the existing World Trade Organization (WTO) regime and the twenty-first century’s unquenchable demand for energy.

This Comment will first discuss the emergence of renewable energy in the global economy, focusing on examples in China and the United States. It will then explain how WTO agreements currently address the issue, and discuss the problems facing countries that attempt to support their domestic renewable energy industries under this framework. Finally, this Comment will propose the creation of a new WTO agreement on renewable energy modeled after the Agreement on Agriculture’s box system.

II. THE EMERGENCE OF RENEWABLE ENERGY INDUSTRIES

Renewable energy industries are not isolated to either the developed or developing world. But a country’s development status does impact how

important renewable energy is to the country because developed and developing countries have different energy infrastructures, needs, and priorities.\textsuperscript{4} Developing countries such as China are potentially focused on renewable energy as a vital cost-saving mechanism to help them continue developing, whereas developed countries such as the United States may see it as more of an environmental issue. The WTO's prioritization of one worldview over the other in its policies is therefore extremely important when considering how different countries think about these issues.

A. Chinese Support of Renewable Energy

China is extremely dedicated to expanding its renewable energy capabilities. In 2011, 65 percent of its energy was coal-based.\textsuperscript{5} As a developing country, China's energy costs are large, and thus China has made renewable energy an important focus in order to reduce the amount it spends on energy. The national government identified seven strategic industries in its twelfth Five-Year Plan, one of which is new energy, a category that includes nuclear energy, wind energy, solar energy, and biomass energy.\textsuperscript{6} China's strategy involves developing "national champions," or local companies that dominate global competitors in the domestic marketplace.\textsuperscript{7} To this end, non-Chinese companies are often concerned about the legality of the government's financial support to the extent that it can affect their ability to compete.\textsuperscript{8} The opacity of the government's financial assistance creates problems in quantifying how much government aid is going to which programs.\textsuperscript{9} Industry experts in the United States consider hidden subsidies "a key reason that Chinese exports undercut prices in the United States."


\textsuperscript{8} Livingston & Friedman, supra note 7.

\textsuperscript{9} Chaudhri, supra note 7.
and gain market share." China’s renewable energy sector is uniquely interesting because most large industries are state-owned enterprises supported by the national government and thus receive large amounts of government support. Other countries’ support of renewable energy industries usually focuses on financial assistance but do not have as much control as China’s government.

China’s financial support generally includes subsidies, favorable tax policies, pricing mechanisms, and rewards. For example, in past programs, China has reduced corporate income taxes, reduced value added taxes, provided other tax incentives, used feed-in tariffs, implemented research and development incentives, and created subsidies for energy conservation technologies improvement. This financial support is distributed over a number of stages in the industry, including overhead costs, research and development, and local projects. Different types of support may be used for different industries and to varying degrees, and not all industries are treated equally. A specific example is the Renewable Energy Act of 2005, which promotes development and production of renewable energy technologies. This legislation funds both research and actual construction of renewable energy projects, demonstrating the different ways governments can become financially involved with this type of development. Going forward, China will continue its significant financial support of renewable energy by implementing an eleven billion dollar stimulus plan to assist the ailing solar energy industry.

B. The United States and Renewable Energy

The U.S. government also provides a significant amount of assistance to domestic renewable energy industries. The federal government provided sixteen...
billion dollars in renewable energy subsidies in 2011 alone. However, because renewable energy is not as fundamentally tied to the United States’ progress as in China, the national government has not prioritized renewable energy to the same extent.

While federal assistance is more centralized than a collection of states’ policies, it can also be unstable because of the periodic budget negotiations that threaten to reduce or eliminate this type of support. This has real market consequences, as investment can slow or freeze until the budget is finalized. Investors also prefer low-risk, conventional technologies that can be built quickly instead of long-term, innovative technologies that would be riskier. Therefore, government assistance is often key to encourage investment in industries like renewable energy. This makes Congress’s recent actions especially troubling to the U.S. renewable energy industry, because while Congress extended production tax credits as part of the recent fiscal cliff deal, it has only been renewed for a year and its future is still tenuous. Other tax credits for solar energy expire at the end of 2016, and geothermal and biomass tax credits expire at the end of 2013. There is some state-level financial support of renewable energy, but it is not very coordinated with federal incentives, so rather than being an efficient addition it is more of a “patchwork of varied and volatile policies.” This reduces its appeal to investors, especially as compared to the Chinese approach.


21 Id.

22 Id. at 115; Clifton Yin, _Assessing the Wind Production Tax Credit_, THE ENERGY COLLECTIVE (Jan. 8, 2013), http://theenergycollective.com/cliftonyin/167936/assessing-wind-production-tax-credit.


25 Victor & Yanosek, supra note 20, at 115.
The U.S. government uses tax incentives as a significant tool for encouraging renewable energy investment. The Production Tax Credit (PTC) created in 1992 is an important example, and the credit's amount is connected to how much electricity the product produces. PTCs have impacted the domestic industry and led to a wind energy boom. The use of tax incentives in particular significantly affects the structure of the renewable energy industry in the United States. The type of incentive impacts the type of investor that can take on the project. Nonrefundable tax credits are attractive to investors with resources at the outset, such as large corporations and wealthy individuals. Monetary grants or direct subsidies allow for investors without large amounts of cash. In order for a producer to use the PTCs it earns, it must have federal tax liabilities and only the owner can claim them.

The United States also supports these programs through loan guarantees. This approach is not always successful. Solyndra, a solar power company in the United States, went bankrupt in 2011 despite over half a million dollars in federal loan guarantees. Solyndra's failure opened President Obama and his support of renewable energy programs to increased criticism and put the future of federal support of renewable energy projects in jeopardy. In April 2012, however, the Department of Energy said that it would continue issuing conditional loan guarantees for clean energy projects, despite Solyndra's bankruptcy.

These examples show that while the U.S. government does support renewable energy technology, it approaches this support from a very different

---

29 Id. at 381.
30 Id.
34 Ernst & Young 33, supra note 24, at 25.
place than China. The United States’ support of renewable energy is because of its environmental impact and, to a lesser extent, the pursuit of inexpensive, domestic energy. But it is not as fundamentally important to developing the nation’s economy as it is in China.

III. THE LEGAL LANDSCAPE

The major goal of the World Trade Organization (WTO), a global organization composed of member states, is to open trade between nations. Its various agreements cover goods, services, and intellectual property. WTO members create the agreements themselves through negotiation rounds, and the WTO body of rules has evolved over time.

The WTO has 159 members, including economic powerhouses such as the United States and China. WTO agreements include rules that apply to trade amongst members generally. The General Agreement on Tariffs and Trade (GATT) is the core of the WTO and limits member states’ ability to restrict imports. While the original GATT was passed in 1947, it has since been modified and expanded considerably. The GATT “is built around the idea that tariffs should be the sole mechanism for countries to restrict imports, with other provisions meant to protect the integrity of the tariff regime.” There are also a number of specific agreements that provide special rules and guidance for certain areas of trade. There are a number of these specific agreements, including the Agreement on Agriculture. The Agreement on Agriculture is an agreement designed to take into account the special nature of agricultural economies and the important role governmental subsidization plays in these industries.

There is, however, no WTO agreement about renewable energy, and as such it is not treated differently as a broad category. The Doha negotiation

36 The WTO, Understanding the WTO 10 (5th ed. 2011).
40 Sanford E. Gaines, Considering WTO Law in the Design of Climate Change Regimes Beyond Kyoto, 8 IOP CONF. SERIES: EARTH AND ENV’Y SCI. 1, 2 (2009).
42 UNDERSTANDING THE WTO, supra note 36, at 26.
round that began in 2001 included discussions about eliminating tariff and non-tariff barriers for renewable energy products and services. Potential proposals included the United States' standstill agreement to impose a "freeze" on green tariff lines. The Doha round is "effectively dead" because the talks broke down and have not been resuscitated, so renewable energy still has no special exceptions under WTO agreements. Until such an agreement happens, renewable energy subsidies will be generally subject to the Agreement on Subsidies and Countervailing Measures (SCM Agreement) unless they fall under the auspices of a separate, specialized agreement.

A. Agreement on Subsidies and Countervailing Measures

The SCM Agreement defines important economic terms (such as "subsidies"), outlines restrictions on subsidies, and identifies both prohibited and actionable subsidies. Importantly, the SCM Agreement is not expansive, as the WTO did not aim to prohibit subsidies in general. Indeed, it does not disallow all subsidies, and different types of impermissible subsidies are treated differently. The SCM Agreement is also very limited in terms of enforcement mechanisms, and this can allow for member states to manipulate the rules.

Under the SCM Agreement, a subsidy is defined as a financial contribution, foregone government revenue, provision of goods or services, or a mechanism that does one of these three actions through a private body, that is given by a member government or territory that confers a benefit. In Canada—Measures Affecting the Export of Civilian Aircraft, a WTO Panel determined that a country confers a benefit "when it confers an advantage on the recipient relative to applicable commercial benchmarks, i.e., when it is provided on terms that are more advantageous than those that would be available to the recipient on the

---

44 This type of proposal may disproportionately affect developing countries. Daniel Pruzin, WTO: Hopes Fading for WTO 'Deliverables' Deals as Delegations Take Hard Line on LDC-Plus, 28 INT'L TRADE REP. (BNA) 1164 (July 14, 2011).
45 Gantz, supra note 39, at 321.
47 Id.
48 SCM Agreement, supra note 46, art. 1.
Ad mighty limits its restrictions to "specific" subsidies. Specific subsidies are those that are specific to an industry, enterprise, or group. The SCM’s definition of a subsidy is limiting, as financial contributions that a member country cannot prove confer a benefit are not within the scope of the SCM Agreement, nor are subsidies that do not benefit a specific industry.

The SCM Agreement outlines two types of impermissible subsidies: prohibited and actionable. Prohibited subsidies are those specifically designed to distort trade, such as setting export targets or requiring domestic goods over imported ones. If the WTO finds that a member state has a prohibited subsidy, the consequence is simply that the member state must remove it. An example of a subsidy that is likely prohibited is China’s Ride the Wind Program, which required local materials for the production of windmills for wind energy, because this favors domestic windmill parts over imported ones. Although the program was never fully litigated in the WTO, the program was terminated after the U.S. Trade Representative began to investigate its legality under the WTO trade rules. The program arguably violates the two-part SCM Agreement test because it is both a clear financial contribution and the benefit is contingent on using local content. Because removal is the only consequence under WTO law, member states have limited recourse if a country develops an impermissible program, profits from the unfair advantage, and then removes the program before it can be litigated. Although, if the WTO does reach the stage of issuing a ruling, there are consequences such as retaliation to recoup any damage done. If the program is withdrawn before the litigation concludes, there can be no such retaliation without violating the rules.


Understanding the WTO, supra note 36, at 45.


Actionable subsidies do not have an intent requirement. Instead, there must only be an adverse effect on another member state: injury to the domestic industry, nullification of benefits to another signatory, or serious prejudice of the interests of another member. 59 This is included in the definition of a benefit as laid out in Canada—Aircraft because the other member state is in a worse position than it would have been. 60 Serious prejudice is presumed when the total ad valorem subsidization is more than 5 percent. 61 Affected members can refer a suspect subsidy to the Dispute Settlement Body, and if they prevail the only remedy available is that the member states must withdraw the subsidies or alter them so that they do not have adverse effects. 62

B. Article XX

Article XX is an important part of the GATT that outlines general exceptions to member states’ obligations. 63 Article XX consists of both a chapeau and a list of possible exceptions. The purpose of the chapeau is generally to prevent the abuse of exceptions in Article XX, and to avoid applying Article XX to frustrate the legal obligations of right holders under the GATT. 64 The chapeau notes that “[u]nilateral trade measures may be used where necessary to protect human health or to promote conservation of natural resources, provided that the measures do not result in arbitrary or unjustifiable trade discrimination or serve as a disguised restriction on trade.” 65 The chapeau’s language is notably restrictive and this exception cannot be liberally construed.

An important case under Article XX that shows the importance of the chapeau is United States—Standards for Reformulated and Conventional Gasoline (United States—Gasoline). 66 It involved the Clean Air Act and the Environmental Protection Agency’s ability to regulate and control toxic and other pollution from gasoline manufactured or imported into the United States. 67 The Appellate Body found that the chapeau addresses the manner in which the measure is

59 SCM Agreement, supra note 46, art. 5.
60 See, Canada—Aircraft, supra note 49.
61 SCM Agreement, supra note 46, art. 6.
63 GATT, supra note 38, art. XX.
65 Gaines, supra note 40, at 2.
66 United States—Gasoline, supra note 64.
67 Id. at 2.
applied, as opposed to its contents.68 Because of this, even a trade measure that was completely focused on the protection of human health could be prohibited if it was applied in a way that discriminated against or arbitrarily focused on certain nations. For example, the reasoning in United States—Gasoline came to bear on the case United States—Import Prohibition of Certain Shrimp and Shrimp Products (United States—Shrimp). The United States wanted to protect sea turtles and imposed a ban on shrimp harvested with commercial fishing technology that can harm sea turtles.69 The Appellate Body noted that, according to United States—Gasoline, it should examine the way in which the United States applied this particular restriction and then decide if it was “being abused so as to frustrate or defeat the substantive rights of the appellees under the GATT 1994.”70 The United States’ regulation was not allowed because although it “serves an environmental objective that is recognized as legitimate under paragraph (g) of Article XX of the GATT 1994, this measure has been applied by the United States in a manner which constitutes arbitrary and unjustifiable discrimination between Members of the WTO, contrary to the requirements of the chapeau of Article XX.”71 The WTO found that the United States unjustifiably discriminated against other countries because the United States required other member nations to adopt a policy about sea turtles that was “essentially the same,” not just “comparable,” thereby establishing a “rigid and unbending standard.”72 The WTO was also skeptical because the United States excluded shrimp “caught using methods identical to those employed in the United States” only because the United States had not certified these countries, something the WTO found to be “difficult to reconcile with the declared policy objective of protecting and conserving sea turtles.”73 Because the United States did not look at the appropriateness of each country’s policies and instead held them all to a single standard, the WTO found that the United States discriminated against other nations.74

68 Id. at 22.
70 Id. ¶39.
71 Id. ¶184.
72 Id. ¶163.
73 Id. ¶165.
74 The WTO adopted an expansive definition of discrimination, noting that: “We believe discrimination results not only when countries in which the same conditions prevail are differently treated, but also when the application of the measure at issue does not allow for any inquiry into the appropriateness of the regulatory program for the conditions prevailing in those exporting countries.” Id.
In the list of Article XX’s potential exceptions, the relevant provisions are measures “necessary to protect human, animal or plant life or health” and “relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.” The word “necessary” in Article XX(b) is important and restrictive. In a case dealing with a possible exception under Article XX(d), a WTO panel held that “a contracting party cannot justify a measure inconsistent with another GATT provision as ‘necessary’ in terms of Article XX(d) if an alternative measure which it could reasonably be expected to employ and which is not inconsistent with other GATT provisions is available to it.” A later WTO Panel used this same interpretation of “necessary” in Article XX(b) in Thailand—Restrictions on Importation of and Internal Taxes on Cigarettes. The Panel held that because “there were various measures consistent with the General Agreement which were reasonably available to Thailand to control the quality and quantity of cigarettes smoked and which, taken together, could achieve the health policy goals,” it was not “necessary.”

An example of a program that would likely be permissible under the two requirements is the United States’ renewable portfolio standards. These laws require electric power providers to have a certain percentage of their electricity from renewable sources. Even if we assume that this program is a benefit conferred by the United States and thus harmed a member state, it would still be permissible. First, it fits into the Article XX(g) exception because it “[relates] to the conservation of exhaustible natural resources” and the measures are “made effective in conjunction with restrictions on domestic production or consumption.” Note that this “relating” language in Article XX(g) is not as restrictive as Article XX(b)’s “necessary” language. Second, this program does not violate the spirit of Article XX’s chapeau. The program does not arbitrarily or unjustifiably discriminate between countries in similar conditions or act as a disguised restriction on international trade because it focuses on the domestic energy market and has no local content requirements that might harm other countries.

75 GATT, supra note 38, art. XX(b).
76 Id. art. XX(g).
79 See Gaines, supra note 40, at 9 (noting that the programs’ lack of discrimination between technologies and products does not distort the renewable energy market).
80 Id.
81 GATT, supra note 38, at. XX(g).
countries' contributions to this market. This program cannot be construed as
abusing the exceptions in Article XX or as an attempt to frustrate the United
States' obligations in the WTO because it is a bona fide environmental program
whose purpose is focused on the environment and unrelated to trade.82

Article XX may have potential for finding an exception for renewable
energy because of its language about the conservation of natural resources and
protecting human, animal, and plant health. But an important aspect of Article
XX is intent as well as application. Because it has these limits, this exception will
not allow as many subsidies as the Agreement on Agriculture could because it
will not allow specific subsidies or those that favor domestic products or
services. Article XX is very restrictive, and in evaluating if a policy meets these
requirements it looks to the member state's intent.

While protecting the environment may be a consideration, developing
countries are interested in renewable energy for economic reasons.83 Renewable
energy is attractive because it can be more inexpensive than traditional forms of
energy, can be produced domestically, and can be an industry in and of itself.
Article XX is therefore unlikely to permit otherwise unallowable subsidy
programs created by China because it is making renewable energy investment
choices for economic reasons, not for the sake of conserving natural resources.
Because of the chapeau's underlying intent, current Article XX analysis will
disfavor countries that develop plans for "impure" reasons, in that they
incorporate renewable energy technology for its particular benefits in industrial
development rather than purely for environmental protection. This highlights
the difficulty developing countries face when trying to support domestic
renewable energy initiatives, because similar kinds of economic support for the
"wrong" reasons can run afoul of WTO rules.

IV. ANALYSIS OF RENEWABLE ENERGY SUBSIDIES IN THE
CURRENT WTO FRAMEWORK

Because of the importance of renewable energy in the developing world,
the lack of a specific agreement on the topic is problematic. The current regime,
dominated by the SCM Agreement and Article XX, leaves member states to
apply the rules designed for normal subsidies to the unique features of the
renewable energy industry.

Understanding the role of government subsidies in the economic
development of renewable energy is important because it shows the impact the
current WTO framework has on this development. Higher energy prices and

82 See United States—Gasoline, supra note 64, at 18-19.
83 See Ernst & Young 35, supra note 4, at 3.

Winter 2014
715
energy policies help incentivize the creation of renewable energy technology. Renewable energy development often requires large initial capital investments, but have little or no costs after that point beyond maintenance and basic operation. The technology needed for renewable energy tends to be more expensive than traditional fuel sources. Governmental support is therefore extremely important in this area, even if it is not financial. Research shows that it is government regulation and support that is the primary reason for adopting clean technologies, not simply the reduced cost of these new technologies.

There are a number of different types of subsidies that can be used for renewable energy, and the timing of the financial assistance affects what kind of subsidy it is. For example, "direct subsidies are more often applied earlier in the timeline of research and development (R&D) projects, while tax incentives are generally made available later in a cycle to aid manufacturing ventures or to encourage consumers to adopt the technologies and help to build demand." As noted above, China uses a wide variety of types of subsidies, whereas the United States’ focus is mostly on taxes. This can have an important impact on the general permissibility of a country’s subsidies if one kind of subsidy is more acceptable based on WTO classifications.

This section will examine a variety of subsidies and industries. It will primarily focus on subsidies created by the Chinese government as an example of a developing country whose renewable energy investments are tied to industrial development. It will also consider subsidies in the United States and other developed countries to show how renewable subsidies are different when motivated by more environmental factors.

A. Feed-In Tariffs

Feed-in tariffs are "one of the most important and widely used policy tools to address the problems of climate change." European countries used feed-in tariffs extensively to help expand renewable energy industries, and with governmental support, private industries were able to create "15,000 megawatts of solar photovoltaic (PV) power and more than 55,000 megawatts of wind

84 Id.
85 Heal, supra note 31, at 4.
87 Id. at 649.
88 Campbell, supra note 11, at 2.
89 See Section I.
90 Lee, supra note 55, at 58.
power” between 2000 and 2009. Globally, feed-in tariffs have helped create approximately 75 percent of global solar PV power and 45 percent of global wind power. Feed-in tariffs offer developers a long-term (usually ten to twenty-five years) purchase agreement for the sale of renewable energy-derived electricity. Countries can tailor these contracts depending on the type of technology they most want to encourage, where they want these projects to take place, as well as other details that may be domestically important in developing a nascent renewable energy industry.

The Canadian province of Ontario began its feed-in tariff program in 2009, paying developers set prices for their electricity that are meant to not only cover the expended capital and operating costs, but also provide a reasonable rate of return. In order to qualify for this program, the project developers must be in Ontario, use an eligible renewable energy resource (bioenergy, solar energy, waterpower, or wind), and be able to connect to a local distribution system. The feed-in tariff program has a domestic content requirement. The Canadian government argued that these subsidies were necessary to provide a “reasonable return on the investment” for these costly projects. The obvious and significant lack of a specific renewable energy agreement within the WTO is clearly problematic in this instance, where the renewable energy goals of a member state and its international trade obligations are in clear conflict.

In 2010, Japan filed a complaint against Canada related to feed-in tariffs in a case called Canada—Measures Relating to the Feed-in Tariff Program (Canada—Feed-In Tariff Program). The European Union later joined the case and also presented evidence. Japan claimed that Canada’s contracts for wind and solar projects violated WTO rules because the government’s subsidies are “contingent upon the use of domestic over imported goods, in violation of Articles 3.1(b) and 3.2

---

92 Id.
93 Id.
94 Id.
95 Lee, supra note 55, at 59.
96 Id.
97 Id.
98 Id.
100 Id. at 61 n.15.
of the SCM Agreement.” A portion of Ontario’s electricity market involves competition for supply contracts through bidding, with the lowest bid that meets certain conditions winning the contract. Essentially, Japan argued that because a subsidy that lowers costs for electricity producers who use domestic goods over imported goods, they will have lower overall costs and will have an advantage in submitting the lowest bid and have thus been benefited, making it a subsidy under the SCM Agreement. Japan claimed that because its own similar products received less favorable treatment because of these subsidies, this satisfies the SCM Agreement’s harm requirement.

Interestingly, the Panel concluded that Canada’s domestic content requirements violated its obligations under the Agreement on Trade Related Investment Measures, but that Japan and the European Union failed to establish that these programs are subsidies as defined by the SCM Agreement because they did not establish that they confer a benefit. This case may be helpful in outlining the main obstacle for renewable energy and the Agreement on Agriculture: its stringent limitations. Because it is product-based, the Agreement on Agriculture is very limited in a case like this where even if agricultural settings are used or if farmers are the ones producing the wind on their properties, it does not apply. Although the parties hotly contested the issue of market definition, the Panel had no difficulty defining the product as electricity. This case again emphasizes the conflict between encouraging renewable energy development and international trade commitments.

B. Solar Panels

Solar panels are an important source of renewable energy. They are especially important in China, the world’s largest manufacturer of solar panels. Along with this production, the Chinese government continues to be supportive of the industry domestically, recently increasing solar power capacity targets to

101 Canada—Feed-In Tariff, supra note 98, ¶ 3.1.
102 Id. ¶ 7.29.
103 Id. ¶ 3.1, 7.29.
104 Id. ¶ 3.1.
105 Much of this discussion turned on defining the market and what the market would be in the absence of these programs. The Panel did not think that a competitive wholesale market would exist if these programs did not exist, and thus found that comparisons of this type were not relevant. Canada—Feed-In Tariff Program, supra note 98, ¶ 7.310, JPN-139 ¶ 8.3, EU-140 ¶ 8.7.
106 Canada—Feed-In Tariff, supra note 98, ¶ 7.310.
ten gigawatts (up from seven).\textsuperscript{108} China may redouble this in an attempt to reach forty gigawatts by 2015 to support the local solar power industry.\textsuperscript{109} Because of the global overcapacity of the solar panel manufacturing market, this effort is important for the domestic Chinese market to continue to grow.\textsuperscript{110} In 2012, the Chinese government reduced subsidies by 21 percent, from $1.11 per watt to $0.87 per watt, for developers who use the power they generate for their own use.\textsuperscript{111} China has also recently approved subsidies for rooftop solar installations.\textsuperscript{112} While this particular subsidy is not production related and does not implicate international trade agreements, it shows the central government’s commitment to the solar industry at home and abroad. Because of international trade disputes related to anti-dumping and subsidy investigations, China’s solar export value for 2012 fell 40 percent from 2011, to only $2.08 billion.\textsuperscript{113} Other governments, such as Germany, the United Kingdom, and Italy have reduced their own solar subsidies in part because of the inexpensiveness of China’s solar panels.\textsuperscript{114}

Solar energy sources are the dominant renewable energy source globally, and photovoltaic (PV) systems are popular for harnessing solar power.\textsuperscript{115} Solar PV technology directly converts sunlight into electricity through solar cells.\textsuperscript{116} When connected, these cells create a photovoltaic module.\textsuperscript{117} In 2008, global PV capacity was just fifteen gigawatts, though that number is increasing.\textsuperscript{118}

\begin{thebibliography}{118}
\item \textit{See id.}
\item Cao & Stilwell, \textit{supra} note 107.
\item \textit{China Dims, supra} note 111.
\item Dincer, \textit{supra} note 5, at 714, 719.
\item \textit{Id.}
\item Dincer, \textit{supra} note 5, at 714–15.
\end{thebibliography}
An example of a PV subsidy program is China's Golden Sun program, its second national solar subsidy program, established in 2009. Under the Golden Sun program, the central government gives firms an investment subsidy of up to 50 percent for solar power projects. In areas without a power supply, this subsidy increases to 70 percent.

These subsidies likely do not fall within the scope of Article XX's exceptions for environmental protection. By increasing the use of solar energy both domestically (and, with their exported solar panels, abroad), China could argue that the Golden Sun program serves a legitimate environmental purpose. By reducing the use of and dependence on fossil fuels, this program could be cast as "necessary to protect human, animal or plant life or health" and "relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption." But this argument, while it incorporates an argument within the chapeau, was clearly not China's primary motivation in creating the Golden Sun program. While the consequences of the Golden Sun program surely benefit the environment, the intent of the program is more economical than environmental. As noted above, the solar industry and its continued health are important to the national economy. In *United States—Gasoline*, the Appellate Body noted that the chapeau plays the important role of preventing the abuse of these exceptions to avoid WTO obligations. Because the Golden Sun program's positive environmental consequences seem to be incidental rather than the driving purpose of the program, it is unlikely that the WTO would permit this program. Allowing this to be an environmental exception under Article XX would frustrate the legal obligations of right holders under the GATT because it is merely incidental and therefore a pretext for this argument.

C. General Article XX Analysis

Article XX offers the most textual support for justifying programs that aim to protect the environment despite potential adverse effects on free trade. This

---

120 Campbell, supra note 11, at 8.
121 China: Golden Sun Programme, supra note 119.
122 GATT, supra note 38, art. XX(b).
123 GATT, supra note 38, art. XX(g).
124 United States—Gasoline, supra note 64, at 22.
125 Id. at 19.
Renewable Energy Subsidies

Renewable Energy Subsidies does not mean, however, that the text of Article XX is a blank check for any program with a tenuous environmental link. In order to have an argument, a country's policies must both meet a stated exception from the list in Article XX and fall within the language of the article's chapeau.\textsuperscript{126} Luckily, there is jurisprudence on this issue that clarifies the extent to which this exception is available. Importantly, the jurisprudence limits the scope of the exception considerably and reads the chapeau very strictly.\textsuperscript{127}

While Article XX could be extremely helpful when member states try to defend their subsidization of renewable energy, it is clearly incomplete. For example, in \textit{Canada—Feed-In Tariff Program}, Canada's goal of making renewable energy a feasible alternative to, and competitive in, its domestic electricity market would not singularly render its program acceptable under Article XX. While Canada could argue that the feed-in tariffs are "necessary to protect human, animal or plant life or health"\textsuperscript{128} and "relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption,"\textsuperscript{129} Article XX's chapeau is an insurmountable obstacle. Much like in \textit{United States—Shrimp}, the WTO would likely find that its domestic content requirement would be an arbitrary and unjustifiable act of discrimination between WTO members.

It is important to note that despite these notable restrictions in finding an exception in Article XX, the WTO did not say that this could never happen. There is still a possibility of using Article XX as a way of allowing its members to protect the environment. In \textit{United States—Shrimp}, the Appellate Body specifically noted that it had "not decided that the protection and preservation of the environment is of no significance to the Members of the WTO."\textsuperscript{130} Essentially, in order to meet the requirements of Article XX, a subsidy would first have to be necessary to protect human, animal, or plant life or health or be related to the conservation of exhaustible natural resources.\textsuperscript{131} It would then have to apply equally to all member states, so any type of domestic content requirement or special treatment would not be allowed. It would also have to be very carefully applied so that other countries could not claim that it was being abused or used to infringe on other member states' basic rights under the

\begin{footnotes}
\item[126] \textit{United States—Shrimp}, supra note 69, ¶ 15, 151, 156–57.
\item[127] \textit{See United States—Gasoline}, supra note 64, at 22.
\item[128] GATT, supra note 38, art. XX(b).
\item[129] \textit{Id.} art. XX (g).
\item[130] \textit{United States—Shrimp}, supra note 69, ¶ 185.
\item[131] GATT, supra note 38, art. XX (b), (g).
\end{footnotes}
In addition to these Article XX requirements, it would also have to be specific enough to qualify as a subsidy under the SCM Agreement.

The exceptions embodied within Article XX, providing for the conservation of natural resources and protecting human, animal, and plant health, are the most explicit in addressing the unique circumstances of renewable energy and its positive environmental consequences in the context of international trade law. If the WTO does not specifically address the unique needs of the renewable energy industry in the context of international trade law, Article XX is likely to remain on the forefront of environmentally friendly WTO disputes. Although the Appellate Body did not foreclose the possibility of Article XX being used to uphold a country’s environmental policies, its decisions in United States—Gasoline and United States—Shrimp show that this is significantly limited.

V. CREATING A MODEL FOR RENEWABLE ENERGY BASED ON THE AGREEMENT ON AGRICULTURE

A new model for how the WTO handles renewable energy would, ideally, not entirely rely on the environmental hook that Article XX provides. It would recognize the economic benefits that renewable energy can provide and encourage countries to use this technology. The fact that it benefits the environment is often just an added benefit compared to the central focus of providing affordable energy. However, it is important to keep in mind that because one of the major goals of the WTO is to increase access to markets and increase free trade, these must be important considerations in any viable proposal. This section will first describe the Agreement on Agriculture and then discuss how a new agreement could be modeled on its box classification system.

A. The Agreement on Agriculture

The Uruguay Round of negotiations for the modernization of the GATT from 1986 to 1994 included the creation of the Agreement on Agriculture. The Agreement on Agriculture aims to distort trade as little as possible, while still allowing agricultural products to receive different treatment from industrial products. It uses a box system to analyze different types of agricultural

132 United States—Shrimp, supra note 69, ¶39.
133 About the WTO, supra note 35.
134 Understanding the WTO, supra note 36, at 26.
135 Id. at 26–27.
subsidies on the basis of how much they are likely to distort trade.\textsuperscript{136} This Section explores ways in which renewable energy technologies that involve agricultural settings could relate to the Agreement on Agriculture.

1. The box classifications.

There are three types of box classifications under the Agreement on Agriculture: the blue box, green box, and amber box.\textsuperscript{137} Each classifies different types of subsidies that range in permissibility. Box categorization is challenging because it requires classification of what a subsidy is benefiting as well as mathematical calculations, and percentages are significant in evaluating a program's permissibility. Despite these difficulties, box categorization helps nations understand the broader categories of permissibility. Once a program has been placed in a certain box, it becomes easy to evaluate. Box categorization also permits flexibility within the context of renewable subsidies while still establishing clear lines of permissibility. And because of the Agreement on Agriculture, nations are already familiar with the general framework.

The blue box includes programs that involve direct spending and are exempt if focused on specified areas.\textsuperscript{138} Actual production is still required, but they do not necessarily relate to the quantity.\textsuperscript{139} These payments are linked to supply control programs, and do not count toward the level of support that the WTO aims to reduce.\textsuperscript{140} There is no limit on the number of blue box programs a country can have.\textsuperscript{141} During negotiations, different countries were able to get their preexisting programs placed into the blue box, so the current system is somewhat country-specific in terms of existing programs and domestic industries.\textsuperscript{142} For example, the Blair House agreement allowed the United States' cereal direct payments to count as blue box payments, even though other types of direct payments are not allowed.\textsuperscript{143} The United States proposed eliminating the blue box category during the Doha rounds; its elimination in the future


\textsuperscript{137} \textit{UNDERSTANDING THE WTO}, supra note 36, at 29.

\textsuperscript{138} \textit{Id}.

\textsuperscript{139} \textit{Id}.

\textsuperscript{140} Tim Josling & Stefan Tangermann, Implementation of the WTO Agreement on Agriculture and Developments for the Next Round of Negotiations, 26\textit{ EUR. REV. OF AGRIC. ECON.} 371, 377 (Apr. 1999).

\textsuperscript{141} Lars Brink, \textit{WTO Constraints on Domestic Support in Agriculture: Past and Future}, 57\textit{ CANADIAN J. AGRIC. ECON.} 1, 13 (Mar. 2009).

\textsuperscript{142} Josling & Tangermann, \textit{supra} note 140, at 377.

\textsuperscript{143} \textit{Id}.
could be seen as a way to strengthen the WTO’s agricultural uniformity in a multilateral way by reducing these special exceptions.\textsuperscript{144}

Green box programs include those that have a minimal impact on trade; specifically that they have no, or at most minimal, trade-distorting effects or effects on production.\textsuperscript{145} They are always permissible, with no limit on the amount countries can spend or the number of programs they can have.\textsuperscript{146} Unfortunately, Annex 2 does not define “trade-distorting effects or effects on production,” and there are no official rulings on its legal meaning in this context.\textsuperscript{147} Generally accepted green box programs do not usually relate to production and instead deal with domestic supports such as research, disease control, infrastructure, and food security.\textsuperscript{148} Research and development projects fall into this category, and are most likely to survive if “they can be shown to be part of a bona fide environmental program,” especially if the country can document “the environmental rationale, the expected environmental benefits and the realized environmental benefits of the payments.”\textsuperscript{149} A bona fide environmental program in this spirit is one with a primary purpose of benefitting the environment. This type of program could not be tangential to a larger industrial project because then it would affect production, which is not permissible in the green box definition. China’s Ride the Wind program, for example, would not qualify because while the windmills have environmental benefits, the goal of the local content requirement and industrial subsidies are not grounded in environmental goals but industrial ones. An example of a permitted green box program is Canada’s payments to farmers. Canada has payment programs that were created to stabilize farmers’ incomes, but because they are decoupled from output levels they do not technically support production or distort trade and are therefore permitted as green box payments.\textsuperscript{150}

The amber box contains domestic support measures that distort production and trade.\textsuperscript{151} This, by definition, includes all relevant subsidies that

\textsuperscript{144} Alan Swinbank and Richard Tranter, Decoupling EU Farm Support: Does the New Single Payment Scheme Fit within the Green Box?, 6 ESTEY CENTRE J. INT’L L. & TRADE POL’Y 47, 55 (2005); Josling & Tangermann, supra note 140, at 381.

\textsuperscript{145} Swinbank & Tranter, supra note 144, at 50.


\textsuperscript{147} Brink, supra note 141, at 4.

\textsuperscript{148} UNDERSTANDING THE WTO, supra note 36, at 29.

\textsuperscript{149} DANA, supra note 46, at 10.

\textsuperscript{150} Josling & Tangermann, supra note 140, at 377.

\textsuperscript{151} Domestic Support in Agriculture, supra note 146.
are not in either the blue or green boxes, so unless a country is able to argue that a specific subsidy belongs in either of the others, it is in the amber box. Subsidies in this box are limited and must be *de minimis*, which is mathematically determined.\textsuperscript{152} Unlike the other boxes, this percentage relates to a Total Aggregate Measure of Support, which "includes all supports for specified products together with supports that are not for specific products, in one single figure."\textsuperscript{153} This means that for developing countries, the support is limited to 10 percent or less and for developed countries, 5 percent or less.\textsuperscript{154}

2. The Agreement on Agriculture does not apply to renewable energy.

The Agreement on Agriculture's scope is limited, and this severely impacts its applicability to renewable energy. It focuses on agricultural *products* and *production* rather than agriculture as an industry in general.\textsuperscript{155} As such, it distinguishes between support programs that directly stimulate production and those that do not.\textsuperscript{156} This does not mean, however, that the Agreement on Agriculture is only applicable to direct producers. Past WTO precedent indicates that when financial support "passes through" a non-producer to benefit the direct producer, Agreement on Agriculture analysis can be appropriate.\textsuperscript{157} This is important for research and development programs that receive government support. Research and development programs that involve direct payments to producers or processors are allowed "if the payments are part of a clearly defined environmental or conservation [program]," and if the payments are limited to producers' extra out-of-pocket or loss-of-income costs of participating in the program.\textsuperscript{158}

Procedurally, it is impossible for countries to "reclassify" their renewable energy subsidies as permissible under the Agreement on Agriculture during the WTO dispute process. WTO members must provide the WTO Committee on Agriculture with an annual accounting of their relevant domestic support under the Agreement on Agriculture.\textsuperscript{159} A country could therefore not claim that

\begin{itemize}
\item\textsuperscript{152} Id.
\item\textsuperscript{153} Id.
\item\textsuperscript{154} Id.
\item\textsuperscript{155} The Agreement on Agriculture focuses on tariffs, domestic support of production, and exports. These categories involve products and production. UNDERSTANDING THE WTO, supra note 36, at 28.
\item\textsuperscript{156} Id.
\item\textsuperscript{157} Lee, supra note 55, at 77.
\item\textsuperscript{158} DANA, supra note 46, at 10 (citing Agreement on Agriculture at Annex 2 ¶12).
\item\textsuperscript{159} Effland, supra note 136, at 3.
\end{itemize}
certain subsidies were protected by the Agreement on Agriculture if they had not previously included these expenditures in the report it submitted to the Committee.\textsuperscript{160}

The Agreement on Agriculture tends to be construed relatively literally, so textualism is important.\textsuperscript{161} Arguments related to the Agreement on Agriculture must be rooted in the text. However, the text is limited, especially as it relates to newer technologies that did not exist at the time of its creation. For example, "[a]lthough not technically 'green box' payments, payments to producers of cellulosic ethanol are not limited by the GATT/WTO framework because animal and plant wastes are not agricultural commodities that are the subject of international trade."\textsuperscript{162} This is the type of issue that would likely be addressed in a future iteration of the Agreement on Agriculture, but for now member states must apply the text of the current Agreement on Agriculture as it was initially adopted.

B. A Renewable Energy Model

An agreement on renewable energy could model itself after the Agreement on Agriculture. Much like agriculture, renewable energy is an important industry that requires special protection to flourish. Indeed, before the creation of the Agreement on Agriculture, while the original GATT applied to agricultural trade, it contained loopholes that distorted the market.\textsuperscript{163} The WTO describes the Uruguay Round as "a significant first step towards order, fair competition and a less distorted sector."\textsuperscript{164} The box system of the Agreement on Agriculture reflects different types of agricultural support, favoring those that distort trade the least, and also allows room for distinguishing between developed and developing countries.

1. A comparison of the agricultural and renewable energy industries.

A key difference is the role of the markets in member nations' economies. Agriculture occupies a unique role in trade because of the domestic importance of food supply and providing support to farmers and those who live in rural areas.\textsuperscript{165} Renewable energy is important because of the global demand for energy coupled with a desire to protect the environment. Therefore, while the

\textsuperscript{160} When analyzing these subsidies under the Agreement on Agriculture, this Comment will assume that the countries would follow these procedural requirements.

\textsuperscript{161} \textit{Dana, supra} note 46, at 1.

\textsuperscript{162} \textit{Id.}

\textsuperscript{163} \textit{Understanding the WTO, supra} note 36, at 26.

\textsuperscript{164} \textit{Id.}

\textsuperscript{165} \textit{Id.}
Agreement on Agriculture may be instructive to formulating a model for an agreement on renewable energy, it should not necessarily be adopted pro forma. Instead, any agreement must take into consideration the purposes of each of the Agreement on Agriculture's decisions and how that translates to renewable energy.

2. A renewable energy box method.

Because the blue box is the most permissive program, it should include policies that the WTO would most like countries to adopt. This would likely include the policies that are least restrictive on trade and distort markets the least. Programs that are mainly focused on the environment but still have an economic impact could be blue box programs, like the program in US—Shrimp that aimed to protect sea turtles. The blue box could also distinguish between developed countries and developing countries, allowing developing countries to allocate more of their resources because of both their incredibly high need for low-cost energy and their limited existing energy infrastructure, a distinction already present in the Agreement on Agriculture. Such a distinction encourages compliance with the WTO by developing countries, as they can meet their countries' unique needs and still comply with global norms.

The second-most permissive box, the green box, could encompass programs that have a significant benefit for the environment but have an industrial focus. China's Ride the Wind program would not qualify for the Agreement on Agriculture green box because its subsidies were grounded in industrial goals. Under these criteria, it would, however, satisfy the requirements of the renewable energy green box. This adjustment is significant because encouraging renewable energy programs that benefit the environment is important even if that is not the main goal of the subsidy. This distinction again helps encourage compliance by developing countries. If needed, there could also be a more permissive allowance for developing countries to further this goal.

The amber box of renewable energy would include programs that only tangentially help the environment or disproportionately affect trade. If a subsidy distorts trade far beyond its renewable energy benefits, it would be limited in much the same way that extremely trade-distorting amber box programs in the Agreement on Agriculture are. This classification would prevent countries from attempting to disguise otherwise impermissible subsidies as renewable energy subsidies in order to avoid a challenge by other member states.

C. Barriers to an Agreement

The global need for renewable energy may be in tension with the WTO's general goals for free trade. If domestic subsidization increases the amount of renewable energy available and keeps costs lower, even if it distorts trade, these
interests become deeply conflicted. The inability to reconcile these goals may prevent the WTO from creating a coherent way to deal with the status quo.

There may also be difficulties in creating such an agreement because of the amount of information countries must give the WTO to calculate percentage-based box classifications. For the Agreement on Agriculture to function, member states must give the WTO Committee on Agriculture an annual accounting of their relevant domestic support under the Agreement on Agriculture. Creating such a committee for renewable energy and mandating that member states hand over this type of information is a serious challenge.

VI. CONCLUSION

This Comment shows the difficulties in attempting to find exceptions for renewable energy under the existing GATT framework. While Article XX has a stated environmental exception, the “necessary” requirement and its chapeau’s restrictive language limit its applicability. This is significant because it curtails the ability of developing countries to increase their investments in renewable energy technology without running afoul of WTO rules if it is tied to industrial development, whereas developed countries are more easily able to do so by focusing on environmental protection alone.

This Comment therefore calls for a new solution, a WTO agreement that specifically addresses the unique concerns of the renewable energy industry. Indeed, while the current GATT provides helpful guidelines for a number of specific industries and areas of international trade law, renewable energy is not one of them. Trying to fit renewable energy into the patchwork of other rules is difficult and does not resolve the unique challenges this industry faces. Outside of Article XX, the WTO has not spoken on the important balance between environmental protection and the preservation of free trade. Exceptions under Article XX are also limited because of the chapeau that does not allow disguised restrictions or favoring domestic over foreign products. It is likely that any such program that would be otherwise disallowed but permitted under the Article XX would have to be genuinely and singularly meant for environmental protection. Article XX(b)’s “necessary” language is also a problem, as defining what GATT-compliant measures it could be reasonably expected to use instead is problematic when the goal is environmental protection.

If the WTO fails to create a viable agreement, the result will be the continued manipulation of the current system because of GATT’s relatively toothless enforcement mechanism. Because the punishment for impermissible

---

166 Effland, supra note 136, at 3.

167 See United States—Section 337, supra note 77, ¶ 5.26.
subsidies is simply requiring that countries withdraw them, countries like China are able to develop programs that give their domestic industries a boost and then withdraw them when other countries consider bringing a claim. The current system does not help the renewable energy industry, other member nations who abide by the rules, or the credibility of the GATT in general.

While developed countries such as the United States could align their “altruistic” programs that aim to protect the environment through the use of renewable energies with Article XX’s strict requirements, this does not address the unique concerns of developing countries. Under this current regime, because of China’s status as a developing country still focused on economic expansion, it is not likely to ever find an exception in this current scheme that is geared towards environmental protection alone.

By creating a new, targeted agreement focused on renewable energy modeled on the Agreement on Agriculture’s box system, the WTO could balance member states’ desire to promote free trade as much as possible with the increasing demands for inexpensive energy, as well as the different needs of developed and developing member states. This could improve compliance with WTO agreements and help legitimize the WTO’s role in addressing the problems of the twenty-first century.