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The ASCM and Climate Policy

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I. Introduction

The passage of the “American Clean Energy and Security Act of 2009” (ACESA) by the United States House of Representatives in 2009 launched an extensive public debate on climate policy, a topic that had up until then been limited in the U.S. to academic journals and environmental think tanks. While this debate has popularized the concepts of carbon markets and emission trading schemes (ETS), it has primarily focused on how best to minimize the legislation’s economic impacts. The question of whether the legislation is compatible with U.S. obligations as a member of the World Trade Organization (WTO) has largely been ignored. This is unfortunate, as the ETS created by the ACESA is unlikely to be compatible with the restrictions imposed on WTO members due to its focus on using protectionist measures to minimize the legislation’s negative impacts on the U.S. economy. The ACESA attempts to address immediate competitiveness concerns arising from the ETS it creates by distributing free allowances to those facilities expected to incur the heaviest costs under the legislation. This distribution program, the “Emission Allowance Rebate Program” (EARP) is the focus of this paper.

This paper addresses two questions: (1) whether the EARP is compatible with the WTO’s Agreement on Subsidies and Countervailing Measures (ASCM), and (2) how modifications to the EARP can make it more compatible with that agreement.

A final note should be made regarding terminology. While this paper covers both emission trading schemes and carbon taxes, both types of regulation meet the general definition of a tax.¹ Therefore, the terms “direct taxes”, “indirect taxes”, and “*taxes occultes*” here will refer to both emission trading schemes and carbon taxes.

II. The World Trade Organization and Taxes

The World Trade Organization (WTO) recognizes three different types of taxes: direct taxes, indirect taxes, and *taxes occultes* (literally “hidden taxes”). The WTO Agreement on Subsidies and Countervailing Measures (ASCM) provides definitions for direct and indirect taxes:

“The term ‘direct taxes’ shall mean taxes on wages, profits, interests, rents, royalties, and all other forms of income, and taxes on the ownership of real property.”

“The term ‘indirect taxes’ shall mean sales, excise, turnover, value added, franchise, stamp, transfer, inventory and equipment taxes, border taxes and all taxes other than direct taxes and import charges.”

In more abstract terms, direct taxes are those imposed directly on producers, who are also responsible for paying them. While it is largely recognized that these types of taxes indirectly affect products² (should the income tax imposed on a producer of widgets double, that producer will have an incentive to increase the price of the widgets rather than allow its income to absorb the full impact of the tax, thereby passing the increase onto consumers), this fiction is maintained by the WTO due to the virtual impossibility of calculating the exact impact of the

direct tax on consumer prices.³ Indirect taxes are those imposed directly on products, also known as “consumption taxes.” Whereas producers are responsible for paying direct taxes, consumers are responsible for paying indirect taxes (with the producer typically collecting the tax from the consumer at the point of sale and passing it onto the government).

The logic behind the distinction between the two categories lies in the “destination principle”, which states that products should be taxed in the country of consumption. Indirect taxes, by being attached to a product, can only be paid in the country of consumption. Direct taxes, by being attached to a producer, can only be paid in the country of production. The country of consumption is not always also the country of production (i.e., when a product is manufactured in Country A before being exported to and consumed in Country B), necessitating the distinction. The destination principle’s purpose is to prevent any double-taxation resulting from international trade. This is accomplished by permitting the rebate of any indirect taxes paid on products that are exported for consumption to a country different from the one in which it was manufactured. Take the example of two trading partners, one with a value-added tax system (VAT)* and the other with a sales tax system. The VAT is attached to the product throughout the manufacturing process regardless of whether the product is sold domestically or abroad. In our example this would cause the product to be double-taxed, as the VAT would be applied when it left the borders of the first country and the sales tax would be applied when it was consumed in the second country. Such double-taxation would necessarily place imported products at a disadvantage against domestic products by making them more expensive, other things being equal.

The WTO prevents such an occurrence by permitting indirect taxes paid on exported products to be rebated at the border of the exporting country,⁴ the assumption being that the country importing the product will impose an indirect tax of its own on it at the point of consumption. Such rebates are only allowable for indirect taxes, which are easy to calculate for each product. Direct taxes which, as mentioned above, are significantly more difficult to calculate on a product-by-product basis, cannot be rebated for exports. The ASCM classifies such rebates as “prohibited subsidies” and permits other countries to take punitive trade actions against products that are the recipients of such rebates.⁵

While the specific language of ASCM footnote 1 appears to limit the tax classifications to only direct and indirect (“indirect taxes shall mean...all taxes other than indirect taxes and import charges”), the WTO has recognized a third classification: *taxes occultes*. *Taxes occultes* have been defined by the Organization for Economic Cooperation and Development (OECD) as

“Consumption taxes on (1) auxiliary materials used in the transportation or production of goods (e.g., energy, fuel, lubricants, packing, stationary); (2) durable capital

* A value-added tax is a tax on a product’s estimated market value that is applied at each stage of production, with the full tax being applied at the point of final sale (making it an indirect, or consumer, tax). It is similar to a sales tax in that it is paid by the consumer but different in that the VAT is attached to the product throughout its manufacture, rather than just at the point of final sale.

equipment (e.g., machinery, buildings, vehicles); and (3) services (e.g., transportation, advertising).”⁶

In other words, *taxes occultes* are consumption taxes targeting the process or production method behind the product rather than the product or producer. In this way *taxes occultes* are similar to and yet distinct from both direct and indirect taxes. Indirect taxes and *taxes occultes* are similar in that both are consumption taxes but differ in that indirect taxes are imposed on the consumer while *taxes occultes* are imposed on the producer. *Taxes occultes* and direct taxes are similar in that both are imposed on the producer but differ in that direct taxes are not consumption taxes, while *taxes occultes* are.

The WTO has provided no official answer to the question of whether *taxes occultes* more closely resemble direct or indirect taxes when it comes to adjusting them at the border, particularly in the form of export rebates. In fact, it’s only official statement on the matter was to effectively state that there was no answer and, because there was little interest in the issue at the time (circa 1970), there was no reason to investigate it further.⁷ For reasons discussed below, this question becomes a crucial one when it comes to designing a WTO-compatible program to restrict GHG emissions.

III. ETS Legislation and Export Rebates

The regulation of domestic economic activity raises the specter of businesses moving their activities abroad to countries with more favorable (i.e., less expensive) business environments. In global economics parlance this phenomenon is known as leakage, implying that economic activity “leaks” across borders in response to restrictions being imposed upon business activity.* From a political point of view such leakage is generally frowned upon, as the emigration of business across national borders is popularly associated with a loss of jobs in the country being left behind. Politicians are particularly sensitive to such concerns among their constituents during periods of high unemployment such as the one the U.S. is currently in the midst of. The politicians responsible for creating the ETS legislation currently in Congress (Waxman-Markey in the House of Representatives and Kerry-Lieberman in the Senate) created several provisions in both bills intended to prevent leakage resulting from the regulation of GHG emissions (“carbon leakage”). The two most significant provisions falling within this category are the creation of an “Emission Allowance Rebate Program” and an “International Reserve Allowance Program.” While the latter falls outside the scope of this paper,⁸ the former is addressed at length here.

The Emission Allowance Rebate Program (EARP) attempts to solve the problem of carbon leakage by minimizing the cost increases certain energy-intensive, trade-exposed industries (EITEs) experience under the ETS. Free allowances are to be distributed to EITEs by industrial sector in an amount initially equal to the number of allowances owed by the facilities in each sector. The number of allowances

* Not to be confused with monetary (or credit) leakage.

distributed under the EARP will gradually diminish over time until the program is completely phased out in 2030. As the program's name indicates, Congress intends for the EARP to constitute a rebate to the facilities receiving the free allowances. Some commentators have described it instead as a subsidy. This rhetorical difference is important for legal purposes. As was discussed above, the reimbursement of taxes paid on exports is a "rebate" if they are indirect and a "subsidy" if they are direct. Rebates come with no strings attached while subsidies (in this context) justify retaliatory trade action by other WTO members. Having the EARP classified by the WTO as a rebate will allow the program to exercise its full potential; having it classified it as a subsidy will cause it to be an exercise in futility at best and potentially damaging to U.S. business at worst.

Given the interplay between direct taxes, indirect taxes, *taxes occultes*, rebates, and subsidies, this makes the question of whether the ETS envisioned by Waxman-Markey and Kerry-Lieberman constitutes a direct or indirect tax under WTO definitions a critical one. Classification as an indirect tax will allow the program to proceed as planned. Classification as a direct tax will completely disarm the EARP and potentially render the entire ETS politically unpalatable. While there is currently no conclusive answer to this question, convincing arguments can be made for both arguments. The next section will address these arguments from both economic and legal point of views.

IV. The Tax Classification of Climate Change Measures

A substantial amount of research has been completed in the last decade on the legality of carbon taxes (as opposed to mandatory emission trading schemes) under the WTO. The carbon tax category can be split into two broad subcategories: upstream taxes and downstream taxes. An upstream carbon tax is imposed on a product's inputs, particularly fuel and energy. Such a tax increases the costs of using these high-emission inputs and provides producers with a strong incentive to utilize low-emission fuel and energy instead (i.e., replacing petroleum with renewable hydrocarbons or coal-generated electricity with biomass-generated electricity). A downstream carbon tax is imposed on the final product itself, typically based on its particular "carbon footprint" (i.e., the amount of GHG emissions resulting from its production). In practice such a tax closely resembles a sales or value-added tax in that it is directly attached to the product.

Downstream Carbon Taxes

Much (although not all) of the literature on downstream taxes states that they constitute an indirect tax and can thus be rebated on exported products.⁹ From an economic point of view the traditional indirect taxes listed by the ASCM are very similar to downstream carbon taxes in that both are imposed directly on a product at the point of consumption, with the consumer being responsible for paying the tax and the producer (or merchant selling the good) simply delivering the tax to the government. Additionally, indirect taxes are sometimes used by governments to discourage the consumption of particular products determined to cause "social harm" (i.e., alcohol, tobacco, etc.). Downstream carbon taxes are intended to have a similar effect as they impose the heaviest tax burden on those products responsible for the greatest emissions, thereby discouraging their consumption in favor of lower-emission

competitors. It can also be argued that downstream carbon taxes can be easily calculated and therefore adhere to the reasoning behind the permissibility of rebates on indirect taxes. Unlike upstream carbon taxes and emission trading schemes, there is a close nexus between the final product and the amount of the tax as the tax is applied directly to the final product, allowing for an easy determination to be made as to the appropriate amount of the rebate.

While there is strong support in the literature for the view that downstream carbon taxes can be rebated on exported products, there is little official guidance from the WTO confirming it. The ASCM explicitly permits indirect taxes on exports to be rebated provided the amount of the rebate does not exceed the amount of the tax.¹⁰ This necessarily raises the question of whether downstream carbon taxes constitute an indirect tax. Pauwelyn argues that a carbon tax is legally an excise tax (i.e., a tax on products produced for sale domestically) and thus an indirect tax for WTO purposes under the ASCM.¹¹ Similarly, Lodefalk and Storey argues that the product-specific nature of a downstream carbon tax permits it to be classified as an indirect tax eligible for export rebates.¹² The only relevant guidance from the WTO comes in the form of the GATT Working Party on Border Tax Adjustments, which stated that there was “a convergence of views to the effect that taxes directly levied on products were eligible for tax adjustment.”¹³

Upstream Carbon Taxes

It is difficult to state conclusively whether upstream carbon taxes (i.e., those on inputs such as energy or fuel) can be rebated on exports given the lack of official guidance from the WTO and diversity of opinions in the literature. From an economics perspective the connection between upstream carbon taxes and indirect taxes is not as clear-cut as that between their downstream counterparts and indirect taxes. Whereas downstream carbon taxes are directly attached to a particular product and paid by the consumer at the point of consumption, upstream carbon taxes are attached to raw materials that are used to create products for consumption. The most common example in the context of a carbon tax is a tax on fuel and energy. Such a tax discourages the use of high-emission fuels and energy sources by making the final products resulting from their use more expensive to manufacture. So while the tax is still “attached” to the final product, the nexus between the two is not as prominent as the nexus between a downstream carbon tax and the final product it is attached to.

Legally, this distinction regarding energy taxes is recognized by their inclusion within the *taxes occultes* category rather than explicitly within the indirect taxes category. Specifically, the OECD definition of *taxes occultes* includes consumption taxes on energy and fuel.¹⁴ The little official guidance from the WTO to address the issue of whether *taxes occultes* can be adjusted at the border (i.e., whether the tax can be rebated on exports) is ambiguous. While the Working Party reached a consensus regarding the adjustability of taxes “directly levied on products” (i.e., indirect taxes), it could not come to an agreement regarding the adjustability of *taxes occultes*, stating that “there was a divergence of views with regard to the eligibility for adjustment of [‘taxes occultes’].”¹⁵ The GATT Panel ruled in *United States – Taxes on Petroleum and Certain Imported Substances* [hereinafter *U.S. – Superfund*] that a domestic tax on certain chemicals could also be imposed on imported products in which the taxed chemicals were physically incorporated.¹⁶ The question of whether a product could be taxed based on

taxed chemicals *not* physically incorporated into the product (such as fuel and energy consumed during production) was not answered.

This void in guidance has been partially filled by the literature but no single opinion holds sway over the others. According to Lodefalk and Storey, “BTAs on exports related to climate taxes on inputs not physically present in the final product are contentious and possibly not allowed under the [ASCM].”¹⁷ Goh concludes that energy taxes cannot be adjusted because “‘taxes occultes’ such as energy taxes...share conceptual similarities with social security charges and payroll taxes. They are taxes on factors of production as opposed to taxes ‘applied, directly or indirectly, to’ products.”¹⁸ On the other hand, Biermann and Brohm concluded that energy taxes could “possibly” be rebated on exports after reviewing *U.S. – Superfund* and legislative precedent.¹⁹ The remaining scholars reach the conclusion that there is no conclusive answer.²⁰

Midstream Carbon Taxes

Whereas upstream carbon taxes focus on a product’s inputs and downstream carbon taxes focus on the product itself, midstream carbon taxes focus on the product’s underlying production process. One method of accounting for this is by measuring the emissions by production facility, as Waxman-Markey does. Of the three tax types profiled (upstream, midstream, and downstream), midstream carbon taxes are the least likely to be eligible for export rebates. This is largely attributable to the uncertain nexus between the tax and the final products. If the nexus between taxes on inputs and the final products are potentially too ambiguous under WTO law then the nexus between midstream “facility” taxes are significantly more so. Recall that export rebates on indirect taxes are permissible whereas those on direct taxes are not because the impact of indirect taxes on products is easily calculable, while the impact of direct taxes is not.

From an accounting perspective, a facility tax is not dissimilar to an income or payroll tax. Like the income or payroll tax, a facility tax is handled entirely by the producer. While the ultimate amount of the tax indirectly depends on the type of products being produced in the facility, the producer is under no obligation to pass the tax onto the products responsible for the facility’s emissions in the form of higher prices. In this regard the tax provides producers with the incentive to reduce the emissions resulting from the production process rather than providing consumers with the incentive to purchase products with lower carbon footprints. While there may be little difference from an environmental standpoint (a gram of CO₂-e is a gram of CO₂-e, regardless of other factors), it is a significant difference from an economic standpoint. Returning again to the destination principle, direct taxes cannot be rebated at the border because they are intended to be paid at the place of production rather than consumption. Given that facility taxes are like other direct taxes in that they are intended to be paid by the producer, it stands to reason that they also resemble direct taxes in that they cannot be rebated at the border.

Legally there is even less official guidance from the WTO on the issue of midstream carbon tax rebates than there is for upstream carbon taxes, largely due to their novelty. That which does exist relates to general preferences within the WTO, rather than specific caselaw. First, the WTO has a strong preference for transparency and economic efficiency.²¹ Indirect taxes are significantly more transparent

than direct taxes (to the point where the consumer frequently sees the exact amount of the indirect tax on the purchase receipt). Facility taxes are a less efficient means of linking a product's price to its associated emissions than downstream taxes. This issue of transparency was also mentioned in passing by the Working Party, which was able to agree that it was permissible to rebate taxes with a close nexus to the relevant product at the border but was unable to reach the same conclusion when the nexus was not as close.²²

That said, establishing the existence of a direct tax is only one step toward proving that a government policy constitutes a prohibited subsidy. Two additional requirements must be established under the ASCM: the program must satisfy the ASCM's definition of a subsidy and it must be shown that export criteria is used when distributing the subsidy. A subsidy is defined as a financial contribution by the government resulting in a benefit conferred and applying to specific industries or products.²³ There is some debate as to whether the allowances distributed under the EARP constitute a subsidy²⁴ although it appears that, in an ironic twist, the program's attempt to portray itself as an export rebate may instead cause it to be categorized as an export *subsidy*. As the name of the EARP indicates, its primary purpose is to protect U.S. industries that are exposed to international competition. As such, every industry that it covers can be classified as either energy-intensive or trade-exposed. It has been argued that the EARP does not constitute a subsidy because it utilizes an "objective" list of criteria in determining which industries are to be selected.²⁵ While true, this argument ignores the footnote to ASCM Art. 2.1(b), which states that the objective criteria used by the program cannot "favour certain enterprises over others" and must be "economic in nature and horizontal in application, otherwise the program will constitute a subsidy."²⁶ The EARP favors enterprises falling in the two aforementioned categories over those that do not and, moreover, employs criteria (such as energy and GHG intensity) that are not economic in nature.

Article 2.1(c) permits consideration of factors such as the use of the program in question by a limited number of enterprises and predominant use by certain enterprises when establishing that the specificity requirement has been met.²⁷ According to the Environmental Protection Agency (EPA), 75% of the allowances under the EARP will be distributed to the top ten emitters.²⁸ This focus on a small number of enterprises strongly lends itself to a finding of specificity.

Finally, the ASCM states that "the full or partial exemption, remission, or deferral specifically related to exports, of direct taxes...paid or payable by industrial or commercial enterprises" constitutes an export subsidy²⁹ (and thus a prohibited subsidy under ASCM Article 3.1). An analysis of the relevant caselaw suggests that the export provisions of the EARP cause it to be "specifically related to exports."³⁰ Article 3.1 of the ASCM states that subsidies "contingent, in law or in fact, upon export performance" are prohibited. Recall that the formula the EARP uses to determine which sectors qualify for free allowances under the program is based on a combination of output, import, and export data for each. The inclusion of export data in the formula likely causes the entire program to run afoul of Article 3.1. The WTO held in several cases, including *Canada – Autos*, *Australia – Automotive II*, *U.S. – FSC*, and *Canada – Aircraft*, that basing a subsidy upon several different forms of export performance violated Article 3.1.³¹ *Canada – Aircraft* involved a subsidy program containing several similarities to the EARP.³² First, the *Canada – Aircraft* program based payment of a subsidy upon several factors, only one of which related to export

performance. Additionally, the primary goal of the *Canada – Aircraft* program was the maintenance of the employment and export bases of certain industrial sectors, which is also the primary goal of the EARP. Finally, the *Canada – Aircraft* program required the reporting of export sales revenues by the subsidy beneficiaries; the EARP takes matters further by explicitly using export sales revenues in determining which sectors qualify for the program.

Assuming instead that the ETS constitutes an indirect tax rather than a direct tax, the distribution of free allowances under the EARP becomes a rebate rather than a subsidy. In this scenario the ASCM simply requires the tax rebate on an exported product to be equal to or less than the tax paid.³³ Operating under the legislation’s assumption that the EARP rebates an indirect tax, this poses the question of whether this requirement is met. It is not, at least during the program’s initial years. According to the EPA’s analysis of the EARP, the number of allowances distributed to facilities under the program will exceed their 2006 emissions until 2024.³⁴ The analysis further notes that the aggregate emissions of the industries covered by the EARP are expected to decline by 20% or more by 2020,³⁵ ensuring that the allowances distributed by the EARP will be greater than the recipient industries’ aggregate emissions for several years.

This conflict with the ASCM requirements is further intensified by the formula that the legislation uses to distribute allowances under the EARP. Under the program, the number of allowances to be distributed to each facility is based on a combination of direct and indirect carbon factors.³⁶ The direct carbon factor is in turn calculated by multiplying a facility’s average annual output over two years by the most recent average direct GHG emissions per unit of output for all entities within that sector.³⁷ This use of the sector average when calculating the amount of the rebate to be supplied to a specific entity is problematic, as it ensures that the amount of the rebate will not be the exact amount of the tax paid by the entity. Furthermore, because the aggregate allowances allocated will equal or exceed the relevant aggregate emissions for at least the first several years of the EARP, entities with an emissions per unit of output number that is below the sector average will necessarily receive a rebate exceeding the amount of tax paid on exports under the ETS, making it an export subsidy (and therefore a prohibited subsidy) under the ASCM.

In conclusion, the EARP conflicts with the ASCM whether it is classified as an indirect tax or a direct tax, although it more closely resembles a direct tax. Assuming that it is classified as a direct tax, then the program will satisfy the “subsidy”, “specificity” and “export-related” requirements of ASCM Article 3.1, causing it to be prohibited subsidy under that article. Assuming instead that it is classified as an indirect tax does not change this result, as it then conflicts with the prohibition against providing a rebate that is greater than the amount of the tax being rebated. Whether classified as a subsidy or a rebate, the EARP will constitute a prohibited subsidy under Article 3.1 by extension of Annex I(g).

V. Crafting WTO-Compliant Carbon Regulations

Multiple steps can be taken to improve the compatibility of the EARP with the ASCM. The simplest of these measures is to simply remove the use of any export criteria or status in determining which

industries will qualify for allowances under the program. The ASCM prohibits the use of export criteria when rebating direct taxes paid on exports. Similarly, indirect taxes only run into problems when they are rebated for only exported goods (and then only when the rebate is in excess of the tax). It is thus possible to rebate taxes paid on *all* products, regardless of direct or indirect tax status, without violating the ASCM (otherwise across-the-board tax cuts would violate the ASCM). The purpose of the EARP is to minimize the initial impact of the ETS on domestic industry, allowing the adjustment period to instead be more gradual. Removing the export-based criteria from the EARP and providing the free allowances to entities without regard for where their products are ultimately consumed would not conflict with this goal. An ETS modified in such a way would be less efficient than one making use of export criteria, as emissions restrictions would be eased for all domestic industries rather than just a select few, but this is a necessary price to pay for compatibility with the ASCM.

A more radical measure involves constructing an emissions-regulating program designed to adhere to the ASCM. It has been pointed out that BTAs are more likely to be considered in compliance with the ASCM and GATT if the underlying measures can be defined as a “product ‘tax’”.³⁸ As explained above, this is the result of the distinction between direct taxes and indirect taxes under the destination principle; the closer the nexus between the tax and the product being taxed, the more likely the tax can be rebated on exports of the taxed product while remaining in compliance with the ASCM. From a policy standpoint, therefore, it is simplest to begin by creating a regulation that is in the form of an indirect, product-based tax.³⁹ Such a tax would most likely avoid any restrictions on the rebate of a carbon tax on any exported products,⁹ allowing it to automatically negate one of the more significant competitiveness concerns arising from emission-regulating measures. Rebating the tax paid on all exported products is not as efficient as rebating the tax paid by entities that are both trade-intensive and energy-exposed when it comes to reducing GHG emissions, but it is both simpler and more likely to be compatible with the ASCM by adhering to the destination principle.

VI. Conclusion

This paper examines the compatibility of three types of greenhouse gas (GHG) emission regulatory systems with the World Trade Organization’s (WTO) Agreement on Subsidies and Countervailing Measures (ASCM). Of the three, downstream systems are found to be the most likely to comply with the ASCM. It is uncertain whether upstream systems are compatible with the ASCM and unlikely that midstream systems are compatible with the agreement.

This paper also examines the compatibility of the Emission Allowance Rebate Program (EARP) created by the American Clean Energy and Security Act of 2009 (ACESA) with the ASCM and determines that it is unlikely that the two are compatible. This incompatibility exists regardless of whether the midstream emission trading scheme (ETS) created by the ACESA is classified as a direct or indirect tax under the ASCM. If the ETS is classified as a direct tax then it is incompatible with the ASCM by virtue of its use of export criteria in determining which entities will receive free allowances under the program. If, on the other hand, the ETS is classified as an

indirect tax then it is incompatible because numerous entities will receive a rebate in excess of the amount of tax paid on exported products.

Finally, this paper provides two alternative rebate programs that are significantly more likely to be compatible with the ASCM. The first alternate program is identical to the EARP, with the exception that it makes no use of export criteria in determining which entities qualify for free allowances under the program. The second alternate program is part of a downstream, product-specific carbon tax and rebates the tax paid on all exported products, without reference to any criteria other than the tax paid and the export status of a particular product.

¹ See JOOST PAUWELYN, U.S. FEDERAL CLIMATE POLICY AND COMPETITIVENESS CONCERNS: THE LIMITS AND OPTIONS OF INTERNATIONAL TRADE LAW 21(Nicholas Institute for Environmental Policy Solutions 2007). See also R. ISMER AND K. NEUHOFF, BORDER TAX ADJUSTMENTS: A FEASIBLE WAY TO ADDRESS NONPARTICIPATION IN EMISSION TRADING, *CMI Working Paper 36*, at 11 and Javier de Cendra, *Can Emissions Trading Schemes be Coupled with Border Tax Adjustments? An Analysis vis-à-vis WTO Law*, 15 *RECIEL* 131, at 135-136 (2006).

² See Christian Pitschas, *GATT/WTO Rules for Border Tax Adjustment and the Proposed European Direct introducing a Tax on Carbon Dioxide Emissions and Energy*, 24 *GA. J. INT'L & COMP. L.* 479 AT 485 (1994-1995).

³ See PAUWELYN, *supra* note 1, at 28 fn 45.

⁴ Fn. 1 of the *Agreement on Subsidies and Countervailing Measures* [hereinafter ASCM].

⁵ ASCM Annex I(e).

⁶ ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT, *BORDER TAX ADJUSTMENTS AND TAX STRUCTURES IN OECD MEMBER COUNTRIES*, PARIS: OECD, 1968.

⁷ *REPORT OF THE WORKING PARTY ON BORDER TAX ADJUSTMENTS*, L/3464, November 20 1970, ¶ 14.

⁸ See TRISTAN R. BROWN, ANALYZING H.R. 2454 IN THE CONTEXT OF INTERNATIONAL TRADE LAW for information on the interplay of the WTO and the International Reserve Allowance Program.

⁹ PAUWELYN, *supra* note 1, at 20-21 and MAGNUS LODEFALK AND MARK STOREY, CLIMATE MEASURES AND WTO RULES ON SUBSIDIES, *JOURNAL OF WORLD TRADE* 39, at 37; but see *contra* GAVIN GOH, THE WORLD TRADE ORGANIZATION, KYOTO AND ENERGY TAX ADJUSTMENTS AT THE BORDER, *JOURNAL OF WORLD TRADE* 38, at 412-413.

¹⁰ *Supra* note 4.

¹¹ PAUWELYN *supra* note 1, at fn 47.

¹² LODEFALK AND STOREY *supra* note 9.

¹³ *Supra* note 7, ¶ 15.

¹⁴ *Supra* note 6.

¹⁵ *Supra* note 7.

¹⁶ Panel Report, *United States – Taxes on Petroleum and Certain Imported Substances*, adopted 17 June 1987, BISD 34S/136, ¶¶ 2.5 and 5.2.4.

¹⁷ LODEFALK AND STOREY *supra* note 12, at 39.

¹⁸ GOH *supra* note 9, at 411.

¹⁹ FRANK BIERMANN AND RAINER BROHM, *IMPLEMENTING THE KYOTO PROTOCOL WITHOUT THE U.S.A: THE STRATEGIC ROLE OF ENERGY TAX ADJUSTMENTS AT THE BORDER*, 4 *CLIMATE POLICY* 289 AT 295.

²⁰ See SUSANNE DROGE, HARALD TRABOLD, FRANK BIERMANN, FREDERIC BOHM, AND RAINER BROHM, *NATIONAL CLIMATE CHANGE POLICIES AND WTO LAW: A CASE STUDY OF GERMANY'S NEW POLICIES*, 3 *WORLD TRADE REVIEW* (2004) 161 AT 178. See also PAUWELYN *supra* note 1, at 20.

²¹ PAUWELYN note 1, at 23.

²² *Supra* note 7.

²³ ASCM Articles I-II.

²⁴ See LODEFALK AND STOREY *supra* note 9, at 33. See also *supra* note 9, at 39. But see *Testimony on H.R. 2454 Before the Subcomm. on Trade of the House Comm. on Ways and Means*, 111th Cong. 7 (2009) (statement of Joost Pauwelyn, Professor of International Law, Graduate Institute of International and Development Studies), at 8.

²⁵ See *Testimony on H.R. 2454 Before the Subcomm. On Trade of the House Comm. On Ways and Means, supra* note 24.

²⁶ ASCM Article 2.1(b), fn 2.

²⁷ ASCM Article 3.1(c).

²⁸ ENVIRONMENTAL PROTECTION AGENCY, THE EFFECTS OF H.R. 2454 ON INTERNATIONAL COMPETITIVENESS AND EMISSION LEAKAGE IN ENERGY-INTENSIVE TRADE-EXPOSED INDUSTRIES, INTERAGENCY REPORT 36 (Dec. 2, 2009), at http://www.epa.gov/climatechange/economics/pdfs/InteragencyReport_Competitiveness-EmissionLeakage.pdf.

²⁹ ASCM Annex I(e).

³⁰ See *supra* note 8, at 34-38.

³¹ See *supra* note 8, at 30-31.

³² Panel Report, *Canada – Measures Affecting the Export of Civilian Aircraft*, WT/DS70/R, adopted 20 August 1999, upheld by Appellate Body Report WT/DS70/AB/R, DSR 1999:IV, 1443, ¶ 9.329.

³³ ASCM Annex I(g).

³⁴ *Supra* note 28.

³⁵ *Supra* note 28, at 37.

³⁶ American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. § 764 (2009).

³⁷ H.R. 2454, § 764(b)(2).

³⁸ See *supra* note 21.

³⁹ See TRISTAN R. BROWN, DERMOT HAYES, AND ROBERT C. BROWN, THE EMBEDDED CARBON VALUATION SYSTEM: A POLICY CONCEPT TO ADDRESS CLIMATE CHANGE (2009), at <http://www.farmfoundation.org/news/articlefiles/1718-Brown%20Hayes%20and%20Brown.pdf>.



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