

ARTICLES

COUNTERVAILING CLIMATE CHANGE: EMISSIONS TRADING AND THE SCM AGREEMENT

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ABSTRACT

Emissions trading schemes (ETS) are generally considered to be an effective market-based approach toward reducing greenhouse gas emissions that amplify climate change. As with any public policy, a scheme's effectiveness depends, in part, on participation. Where a government implements an ETS, but strategically limits participation, the effectiveness of the scheme declines, with the potential for regulatory failure. Strategic limitations on participation in ETSs can also have economically distorting effects, by resulting in the transfer of investment and resources from ETS-participating sectors to excluded industries and undermining the regulatory objectives of the ETS. Currently, there are no international agreements in force that mandate the structure of such schemes for particular levels of participation. This means governments can design and implement ETSs as they see fit. Where, however, participation in an ETS is subject to sectoral exclusions, this might give rise to concerns under the World Trade Organization's (WTO) Agreement on Subsidies and Countervailing Measures (SCM Agreement). This Article argues that clean air is a good that is consumed by the emission of greenhouse gases. When a government implements an ETS but does not require participation of sectors that fall within the scheme's set parameters based on the level of emissions, the government provides clean air for less than what the emitter would otherwise be required to pay under the ETS, potentially a countervailable subsidy within the meaning of the SCM Agreement.

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I. INTRODUCTION

Emissions trading schemes (ETS) are generally considered an effective market-based approach toward reducing greenhouse gas emissions that amplify climate change. As with any public policy, a scheme’s effectiveness depends, in part, on participation. Where a government implements an ETS, but strategically limits participation—for example, by excluding specific sectors or firms from the scheme—the effectiveness of the scheme declines, with potential for regulatory failure. If the goal of ETSs is to maximize the opportunity to reduce harmful emissions, high level participation is key.

Currently, there are no international agreements in force that mandate the structure of such schemes for particular levels of participation.¹ This means governments can design and implement ETSs as they see fit. Where a government implements an ETS with significant sectoral exclusions, this could have suboptimal results, not only in environmental terms, but also in trade terms. The reason is simple: while entities covered by an ETS must purchase credits² to emit greenhouse gas emissions above the established allowances, excluded entities do not incur that expense. This, in turn, could result in a shift of resources from covered to excluded sectors, with its consequence in terms of

1. See Conference of the Parties, Adoption of the Paris Agreement art. 6, U.N. Doc. FCCC/CP/2015/E.9/Rev/1 (Dec. 12, 2015) (setting up a *voluntary* framework for international emissions trading between parties) [hereinafter Paris Agreement].

2. As we note below, some ETSs begin with an initial credit allocation for which the affected industries may or may not make initial payments. Be that as it may, once the system is established and initial allocations are made, any additional credits would be subject to purchase requirements.

encouragement of trade in excluded goods and both static and dynamic negative impact on emissions.

There is no internationally agreed-upon framework for ETSs.³ This Article argues that where an ETS has an impact on international trade—for example, by distorting production decisions in a sector or the pricing of a certain good—then it would be reasonable to apply global rules governing international trade to such schemes.

Specifically, in our view the World Trade Organization’s (WTO) Agreement on Subsidies and Countervailing Measures (SCM Agreement) is potentially applicable to such schemes. This is because:

- clean air is a “good” within the meaning of the SCM Agreement;
- it is a good that is capable of consumption by the emission of greenhouse gases;
- where a government implements an ETS but excludes a sector from its scope, it provides clean air, a “good,” to the excluded sector without adequate remuneration; and therefore,
- specific exclusion of a sector, an industry, or a company from an ETS gives rise to a countervailable subsidy within the meaning of the WTO’s SCM Agreement.

Others have contemplated finding a countervailable subsidy where ETSs’ allowances are distributed to certain industries free of charge.⁴ Depending on how an ETS is structured, providing allowances free of charge could have a distorting effect in the market similar to an

3. *See id.* The reluctance of the international community to establish such a framework is evident in the highly tentative language of Article 6. For example, Articles 6.2 and 6.3 of the Paris Agreement provide:

2. Parties shall, *where* engaging on a *voluntary* basis in cooperative approaches that involve the use of internationally transferred mitigation outcomes towards nationally determined contributions, promote sustainable development and ensure environmental integrity and transparency, including in governance, and shall apply robust accounting to ensure, inter alia, the avoidance of double counting, consistent with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to this Agreement.

3. The use of internationally transferred mitigation outcomes to achieve nationally determined contributions under this Agreement *shall be voluntary* and authorized by participating Parties. (emphasis added).

4. *See* Ingrid Jegou & Luca Rubini, *The Allocation of Emission Allowances Free of Charge: Legal and Economic Considerations*, INT’L CENTRE FOR TRADE AND SUSTAINABLE DEV. (Sept. 5, 2011), <https://www.ictsd.org/sites/default/files/downloads/2011/08/the-allocation-of-emission-allowances-free-of-charge.pdf>.

outright exclusion of an industry from the ETS.⁵ In our view, however, the effects of an outright exclusion are different. This article argues that allowing the unregulated consumption of a natural resource by a specific sector that is excluded from an existing ETS constitutes a countervailable subsidy because the emitter is not required to compensate for that consumption through participation in the ETS.

II. EMISSIONS TRADING SCHEMES

For decades, governments around the world have implemented or contemplated schemes to control the release of pollutants.⁶ One such scheme is an ETS. Under an ETS, entities subject to the scheme are allotted a certain number of permits or allowances that set a limit to the amount of pollutants—in this case, greenhouse gases—they are permitted to emit.⁷ Where an entity needs to increase that limit, it may enter the market and purchase additional allowances (*i.e.*, credits).⁸ An ETS effectively enables certain emitting entities to purchase the right to pollute, while rewarding others for reducing their greenhouse gas emissions.⁹ The aim is to have those entities that can reduce emissions most cheaply do so, with the ultimate objective being an overall reduction in greenhouse gas emissions at the lowest cost to society.¹⁰

Typically, an ETS functions by first establishing an overall limit on pollution levels, or the total amount of clean air emitters are permitted to consume.¹¹ Governments set this limit as a baseline to achieve a targeted reduction in emissions.¹² This could be, for example, based on pollution emitted in a given baseline year.¹³ Once the overall limit is established, governments distribute allowances to individual emitters permitting a specified amount of emissions.¹⁴ If certain emitters can

5. *See id.*

6. *See* Richard Schmalense & Robert N. Stavins, *Lessons Learned from Three Decades of Experience with Cap and Trade*, 11 R. OF ENVTL. ECON. & POL'Y 59, 59 (2017).

7. *See How Cap and Trade Works*, ENVTL. DEF. FUND, <https://www.edf.org/climate/how-cap-and-trade-works> (last visited Feb. 26, 2019).

8. *See id.*

9. *See id.*

10. *See* Johan Obermayer, *An Analysis of the Fundamental Price Drivers of EU ETS Carbon Credits 5* (2009) (unpublished thesis) (on file with author).

11. *See How Do Emissions Trading Programs Work?*, ENVTL. PROT. AGENCY, <https://www.epa.gov/emissions-trading-resources/how-do-emissions-trading-programs-work> (last visited Feb. 26, 2019); *see also* ENVTL. DEF. FUND, *supra* note 7.

12. *See* ENVTL. PROT. AGENCY, *supra* note 11.

13. *See* Appellate Body Report, *United States—Standards for Reformulated and Conventional Gasoline*, ¶ 3, WTO Doc. WT/DS2/9 (adopted May 20, 1996).

14. *See* ENVTL. DEF. FUND, *supra* note 7.

reduce their emissions to below the level of the allowance, they can sell those allowances within the ETS.¹⁵ Accordingly, for those emitters that cannot reduce their emissions to their allowance levels, they can purchase the credits from other more efficient emitters. Importantly, allowances are provided directly to emitters from the government or sold through government-run auctions, while credits, initially created by a government as an allowance, are sold to emitters by other emitters in the ETS market.¹⁶

ETSs have taken different forms since their introduction in the 1980s when the United States instituted a scheme to remove lead from fuel for automobiles.¹⁷ A major turning point for the institution of ETSs occurred with the adoption of the Kyoto Protocol in 1997.¹⁸ Article 17 of the Kyoto Protocol opened the door for various ETSs, allowing parties to the agreement to fulfill their emissions reduction commitments.¹⁹ In 2005, the European Union introduced its ETS, which currently operates in 31 countries and covers “power and heat generation,” energy-intensive industry sectors, and civil aviation.²⁰ In 2012, the Regional Greenhouse Gas Initiative (RGGI) became the first mandatory ETS in the United States.²¹ The RGGI covers fossil-fuel-fired electric power generators operating in nine states within the northeast region of the United States.²² In December 2017, China, the largest emitter of greenhouse gases in the world, announced its plans for a mandatory, nationwide ETS.²³

15. *See id.*

16. *See* ENVTL. PROT. AGENCY, *supra* note 11; *see also* ENVTL. DEF. FUND, *supra* note 7.

17. *See History of Reducing Air Pollution from Transportation in the United States*, ENVTL. PROT. AGENCY, <https://www.epa.gov/transportation-air-pollution-and-climate-change/accomplishments-and-success-air-pollution-transportation> (last updated Apr. 19, 2018).

18. *See What is the Kyoto Protocol?*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, <https://unfccc.int/process-and-meetings/the-kyoto-protocol/what-is-the-kyoto-protocol/what-is-the-kyoto-protocol> (last visited Feb. 26, 2019); *see also* Kyoto Protocol to the United Nations Framework Convention On Climate Change, Dec. 10, 1997, 2303 U.N.T.S. 162 [hereinafter Kyoto Protocol].

19. *See* Kyoto Protocol art. 17 (“The Parties . . . may participate in emissions trading for the purposes of fulfilling their commitments under Article 3.”).

20. *The EU Emissions Trading System (EU ETS)*, EUR. COMM’N (Sept. 2016), https://ec.europa.eu/clima/sites/clima/files/factsheet_ets_en.pdf.

21. *Elements of RGGI*, THE REGIONAL GREENHOUSE GAS INITIATIVE, <https://www.rggi.org/program-overview-and-design/elements> (last visited June 20, 2019).

22. *Id.*

23. Quanguo Tanpaifang Jiaoyi Shichang Jianshe Fang’an (Fadian Hangye) (全国碳排放权交易市场建设方案(发电行业)) [Program for the Establishment of a National Carbon Emissions Trading Market (Power Generation Industry)], NAT’L DEV. & REFORM COMM’N (Dec. 18, 2017), <http://www.ndrc.gov.cn/gzdt/201712/W0201712205773866566660.pdf>,

China's ETS, while ambitious, has certain features particularly of interest for the purposes of this Article. Initially, China's ETS covered eight sectors: power, petrochemicals, chemicals, building materials, iron and steel, non-ferrous metals (including aluminum and copper),²⁴ paper, and civil aviation.²⁵ Firms from these sectors that consume more than 10,000 tons of coal per year were to be subject to the ETS.²⁶ However, in its latest announcement, China indicated that only the power sector would be included in its ETS.²⁷ Although firms from the other sectors exceed the threshold for coal consumption, China ultimately excluded those sectors from its ETS.²⁸

Sectoral exclusions are problematic from an environmental perspective; they may also give rise to concerns under the WTO Agreement. A closer look at the SCM Agreement illuminates how excluding sectors from having to pay for the clean air that members of those sectors consume (*i.e.*, the emission of greenhouse gases) pursuant to a government's ETS could well constitute a countervailable subsidy.

III. CURRENT LEGAL FRAMEWORK

The SCM Agreement defines subsidies, disciplines Member's provision of subsidies, and sets out detailed rules and procedures governing the actions Members may take to counter the effects of subsidies (countervailing measures) on their domestic industries.²⁹ Under the Agreement, a Member may impose countervailing measures with respect to subsidized goods causing material injury to its domestic industry, or it may initiate a dispute under the WTO's dispute-settlement mechanism to have the subsidy removed or to offset the subsidy's adverse effects.³⁰

translated in CHINA ENERGY PORTAL (Dec. 18, 2017), <https://chinaenergyportal.org/en/national-carbon-emissions-trading-market-establishment-program-power-generation-industry/> [hereinafter National Carbon Emissions Program].

24. The largest source of emissions from this sector relates to smelting, an electricity intensive process that is primarily sourced by fossil fuel power. *Mitigating Emissions from Aluminum*, COLUMBIA CLIMATE CTR., <http://climate.columbia.edu/files/2012/04/GNCS-Aluminum-Factsheet.pdf> (last visited Feb. 22, 2019).

25. Jeff Swartz, *China: An Emissions Trading Case Study*, IETA.ORG (Sept. 2016), <https://www.ieta.org/resources/2016%20Case%20Studies/China%20case%20study.pdf>.

26. *Id.*

27. National Carbon Emissions Program, *supra* note 23.

28. *Id.*

29. Agreement on Subsidies and Countervailing Measures, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1869 U.N.T.S. 14 [hereinafter SCM Agreement].

30. See Understanding on Rules and Procedures Governing the Settlement of Disputes, 1869 U.N.T.S. 401 [hereinafter DSU].

COUNTERVAILING CLIMATE CHANGE

A. *The SCM Agreement and Countervailing Measures*

The SCM Agreement sets out what constitutes a subsidy, the types of subsidies that are countervailable, and what actions a WTO Member can take if that Member believes it has been harmed as a result.³¹ A subsidy is deemed to exist where there is a financial contribution by a government or any public body that confers a benefit.³² Only subsidies that are specific to an enterprise or industry or group of enterprises or industries may be countervailable.³³ Generally, the existence of a financial contribution is determined based on the nature of the measure, rather than its effects: “[I]ntroducing the notion of financial contribution, the drafters foreclosed the possibility of the treatment of any government action that resulted in a benefit as a subsidy.”³⁴

In identifying the limits on the definition of a subsidy, the panel in *US—Export Restraints* provided a specific example of tariffs on coal imports and their effects on the market:

A hypothetical example better illustrates the difficulties of the U.S. “effects” approach. Let us assume that a government imposes extremely high tariffs on imports of coal. It follows that the price of imported coal in the domestic market would increase and the supply thereof would perhaps decrease. Domestic downstream users of coal, such as steel producers, would probably find it more economical to purchase coal from domestic producers, who would thus see an increase in their sales volumes and would be likely to secure better terms of sale as well. A government action—the imposition of high tariffs on coal—would have benefited producers of coal by causing downstream users of coal to make a greater proportion of purchases from domestic producers vis-à-vis foreign producers as compared to the situation prior to the imposition of such tariffs. Surely this cannot be considered to be a situation where a government “entrusts or directs” a private body (users of coal) to purchase goods within the meaning of subparagraph (iii)—or “entrusts or directs” a private body (producers of coal) to

31. Agreement on Subsidies and Countervailing Measures, WORLD TRADE ORGANIZATION, https://www.wto.org/english/docs_e/legal_e/ursum_e.htm#kAgreement (last visited July 21, 2019).

32. SCM Agreement, *supra* note 29, at art. 1.1(a)-(b).

33. *Id.* at art. 2.1.

34. Panel Report, *United States—Measures Treating Export Restraints as Subsidies*, ¶ 8.38, WTO Doc. WT/DS194/R (adopted June 29, 2001) [hereinafter *US—Export Restraints*].

provide goods within the meaning of subparagraph (iii)—and hence to constitute a financial contribution, although that is precisely the result that applying the U.S. “effects” approach would yield. Were that to be the case, tariffs would constitute financial contributions and, given that they would necessarily confer a benefit on some actors in the market, tariffs would constitute subsidies within the meaning of Article 1 of the SCM Agreement.³⁵

The panel report in *US—Export Restraints* is useful in underlining that the scope of the SCM Agreement is limited to the exhaustive list of “financial contribution[s] by a government or any public body within the territory of a Member” set out in Article 1.1.³⁶ More specifically, the panel’s findings provide that where a government merely creates the conditions that result in lower costs for an input good for a producer, it does not mean that the government is entrusting or directing the provision of that good to the producer.³⁷

Using the above example to further illustrate the point, the high tariff on imports of coal created the conditions that resulted in the increase of the domestic industry’s supply of the coal input to downstream consumers.³⁸ The nature of the government action in this scenario is perhaps to reduce prices for the coal input. Whether the downstream consumers of coal purchase the same or less foreign coal is not a basis to determine whether the government’s action constitutes a financial contribution (and, were it to confer a benefit, a subsidy). Alternatively, if instead of imposing a high tariff on coal imports to balance prices of the coal input, a government offered a direct tax deduction to domestic coal producers that produce coal for use in downstream manufacturing of steel exports, this would be a direct financial contribution³⁹ (and likely a subsidy) that is then passed through to downstream producers that use coal as an input. *US—Export Restraints* confirms that to establish a financial contribution, the focus is on the nature of the government action and not necessarily the effect of that action. With respect to an ETS, at issue is the structure of the ETS and the exclusions, rather than the overall effects of the scheme.

35. *Id.* ¶ 8.37.

36. See SCM Agreement, *supra* note 29, at art. 1.1.

37. *US—Export Restraints*, *supra* note 34, ¶ 8.44.

38. *Id.* ¶ 8.37.

39. SCM Agreement, *supra* note 29, at art. 1.1(a)(1)(ii): “government revenue that is otherwise due is foregone or not collected (*e.g.*, fiscal incentives such as tax credits).”

B. *Elements of a Subsidy*

For the purposes of this article, the relevant “financial contribution” is found in Article 1.1(a)(1)(iii) of the SCM Agreement, which provides that a financial contribution exists where “a government provides goods or services other than general infrastructure, or purchases goods.”⁴⁰ In addition, the SCM Agreement requires that to find a subsidy, the provision of goods must be found to confer a benefit, and for any such subsidy to be countervailable, it must be “specific.”⁴¹

1. What Are “Goods”

The panel in *US—Softwood Lumber* clarified the scope of the term “goods” in the SCM Agreement for the first time.⁴² In that dispute, Canada argued that standing timber did not constitute a “good” because the term “goods” was limited to “tradable items with an actual or potential tariff classification.”⁴³ The panel found that the term “goods” covered “tangible or movable personal property other than money.”⁴⁴ On appeal, the Appellate Body observed that the words “*bien*” and “*bienes*” in the French and Spanish versions of the SCM Agreement encompassed “a wide range of property, including immovable property.”⁴⁵ Relying on the object and purpose of the SCM Agreement, the Appellate Body found that:

It is in furtherance of this object and purpose that Article 1.1(a)(1)(iii) recognizes that subsidies may be conferred, not only through monetary transfers, but also by the provision of non-monetary inputs. Thus, to interpret the term “goods” in Article 1.1(a)(1)(iii) narrowly, . . . would permit the circumvention of subsidy disciplines in cases of financial contributions granted in a form other than money, such as through the provision of standing timber for the sole purpose of severing it from land and processing it.⁴⁶

40. *Id.*, at art. 1.1(a)(1)(iii).

41. *Id.* at arts. 1.1(b), 1.2.

42. Panel Report, *United States—Final Countervailing Duty Determination with Respect to Certain Softwood Lumber from Canada*, ¶ 7.3, WTO Doc. WT/DS257/R (adopted Aug. 29, 2003) [hereinafter *US—Softwood Lumber*].

43. Appellate Body Report, *United States—Final Countervailing Duty Determination with Respect to Certain Softwood Lumber from Canada*, ¶ 54, WTO Doc. WT/DS257/AB/R (adopted Jan. 19, 2004) [hereinafter *US—Softwood Lumber AB*].

44. *US—Softwood Lumber*, *supra* note 42, ¶¶ 7.22–24.

45. *US—Softwood Lumber AB*, *supra* note 43, ¶ 59.

46. *Id.* ¶ 64.

The Appellate Body found that “standing timber—trees—are ‘goods’ within the meaning of Article 1.1(a)(1)(iii) of the *SCM Agreement*”⁴⁷ because it saw “no reason why disciplines on subsidies that regulate the provision of non-monetary resources should focus on identifiable physical objects and not on tangible, but fungible, input material.”⁴⁸ Therefore, in the context of Article 1.1(a)(1)(iii), the term “good” encompasses a wide range of property, including publicly-owned natural resources. As shown in *US—Softwood Lumber*, even trees rooted to the ground, though severable from it, which were incapable of being traded across borders as such, fell within the meaning of “goods” under Article 1.1(a)(1)(iii).⁴⁹

2. When Does a Government “Provide” a Good

After considering whether there is a “good,” the analysis turns to whether that good has been “provided” within the meaning of Article 1.1(a)(1)(iii).⁵⁰ The Appellate Body in *US—Softwood Lumber* addressed the definition of this term as well. Canada argued that the term “provide” had a meaning similar to that implied in the WTO’s Agreement on Agriculture, which was to “give.”⁵¹ The Appellate Body disagreed, upholding the panel’s broader definition of “making available or putting at the disposal of.”⁵² In response to Canada’s concerns about the potentially wide scope of the term, the Appellate Body observed that:

[T]he concept of “making available” or “putting at the disposal of” . . . requires there to be a reasonably proximate relationship between the action of the government providing the good or service on the one hand, and the use or enjoyment of the good or service by the recipient on the other. Indeed, a government must have some control over the *availability* of a specific thing being “made available.”⁵³

The Appellate Body also stated that “what matters, for purposes of determining whether a government provides goods in the sense of

47. *Id.* ¶ 67.

48. *Id.* ¶ 66.

49. *Id.* ¶ 57.

50. SCM Agreement, *supra* note 29, at art. 1.1(a)(1)(iii).

51. *US—Softwood Lumber AB*, *supra* note 43, ¶ 70 (referencing Articles 3.2 and 8 of the Agreement on Agriculture).

52. *Id.* ¶ 71 (internal quotation marks omitted).

53. *Id.* (internal quotations and emphasis in original).

Article 1.1(a)(1)(iii), is the consequence of the transaction.”⁵⁴ As the standing timber is harvested into felled trees or logs, the rights the stumpage arrangements provide over those goods are “a natural and inevitable consequence of the harvesters’ exercise of their harvesting rights.”⁵⁵ “By granting a right to harvest,” the Appellate Body found, “the provincial governments put particular stands of timber at the disposal of timber harvesters,” through stumpage arrangements, “and allow those enterprises, exclusively, to make use of those resources.”⁵⁶ In this way, provincial governments provide the good at issue, *i.e.*, standing timber. Thus, the Appellate Body’s decision in *US—Softwood Lumber* stands for the proposition that through certain arrangements for accessing natural resources, governments provide goods within the meaning of Article 1.1(a)(1)(iii).

3. What Constitutes a “Benefit”

For there to be a subsidy, the financial contribution by a government must be found to confer a benefit.⁵⁷ A benefit is conferred within the meaning of Article 1.1(b) of the SCM Agreement where the recipient is left better off than it would have been absent the contribution.⁵⁸ Regarding a financial contribution in the form of a provision of goods, a benefit is conferred where the remuneration provided is less than adequate in relation to prevailing market conditions.⁵⁹ The market conditions in which that comparison is made must, however, not be “distorted because of the government’s predominant role in providing these goods.”⁶⁰ The Appellate Body found that defining the relevant market is “central to, and a prerequisite for, a benefit analysis.”⁶¹ Article 14 of the SCM Agreement provides guidance on how investigating authorities are to calculate whether a benefit has been conferred with respect to a provision of goods.⁶² Specifically, Article 14(d) states that a “provision of goods . . . shall not be considered as conferring a

54. *Id.* ¶ 75.

55. *Id.*

56. *Id.*

57. SCM Agreement, *supra* note 29, at art. 1.1(b) (“a benefit is thereby conferred.”).

58. Appellate Body Report, *Canada—Measures Affecting the Export of Civilian Aircraft*, ¶ 157, WTO Doc. WT/DS70/AB/R (adopted Aug. 2, 1999) [hereinafter *Canada—Aircraft AB*].

59. *See* SCM Agreement, *supra* note 29, at art. 14(d).

60. *US—Softwood Lumber AB*, *supra* note 43, ¶ 111.

61. Appellate Body Report, *Canada—Certain Measures Affecting the Renewable Energy Generation Sector*, ¶ 5.169, WTO Doc. WT/DS426/AB/R (adopted May 6, 2013) [hereinafter *Canada—Renewable Energy*].

62. SCM Agreement, *supra* note 29, at art. 14.

benefit unless the provision is made for less than adequate remuneration. . . .”⁶³ The adequacy of remuneration is measured “in relation to prevailing market conditions for the good . . . in the country of provision. . . .”⁶⁴

Once a financial contribution in the form of a provision of goods has been identified, to determine whether it confers a benefit to the recipient involves the following steps:

- (1) identification of the “relevant market;”⁶⁵
- (2) determination of whether the relevant market is distorted by the “government’s predominant role;”⁶⁶
- (3) identification of the appropriate benchmark, taking into account specific market conditions;⁶⁷ and
- (4) comparison to determine whether remuneration has been adequate.⁶⁸

4. A Subsidy Must Be Specific

For a subsidy to be actionable (in the context of the multilateral regime governing subsidies) or countervailable, it must be found to be specific within the meaning of Article 2 of the SCM Agreement.⁶⁹ A subsidy may be specific *in law* or *in fact*. The Appellate Body summarized the basic elements of a “specificity” analysis in *EC—Large Civil Aircraft (316)*. Particularly, the Appellate Body stated that Articles 2.1 (a)-(c) are “principles . . . to be considered within an analytical framework that recognizes and accords appropriate weight to each principle;” no one principle alone is “by itself [] determinative in arriving at a conclusion that a particular subsidy is or is not specific.”⁷⁰ Under Article 2.1 (a), a

63. *Id.*, at art. 14(d).

64. *Id.*

65. Appellate Body Report, *Canada—Measures Relating to the Feed-In Tariff Program*, ¶ 5.169, WTO Doc. WT/DS426/AB/R (adopted May 6, 2013) [hereinafter *Canada—FIT*].

66. *Id.* ¶ 5.226.

67. *Canada—FIT*, *supra* note 65, ¶ 5.226; *see* Appellate Body Report, *European Communities and Certain Member States—Measures Affecting Trade in Large Civil Aircraft*, ¶¶ 1120–21, WTO Doc. WT/DS316/AB/R (adopted May 18, 2011) [hereinafter *EC—Large Civil Aircraft AB*].

68. *US—Softwood Lumber AB*, *supra* note 43, ¶ 85.

69. *See* SCM Agreement, *supra* note 29, at art. 2 (noting that subsidies that fall within the meaning of Article 3.1 are deemed specific).

70. *EC—Large Civil Aircraft AB*, *supra* note 67, ¶¶ 942, 945 (citing Appellate Body Report, *United States—Definitive Anti-Dumping and Countervailing Duties On Certain Products From China*, ¶ 366, WTO doc. WT/DS379/AB/R (adopted Mar. 11, 2011) [hereinafter *US—Anti-Dumping and Countervailing Duties China*]).

subsidy is specific where eligibility is limited in favor of certain enterprises.⁷¹ At the same time, a subsidy is non-specific where “it describes criteria or conditions that guard against selective eligibility.”⁷² Thus, the Appellate Body asserted that this part of the analysis is focused on “whether certain enterprises are eligible for the subsidy, not on whether they in fact receive it.”⁷³

Additionally, Article 2.1(c) sets out factors that may be considered if, despite the application of Articles 2.1(a) and (b), there is an “appearance of non-specificity.”⁷⁴ These factors are:

- (1) use of a subsidy program by a limited number of certain enterprises;
- (2) predominant use by certain enterprises;
- (3) the granting of disproportionately large amounts of subsidy to certain enterprises;
- (4) the manner in which discretion has been exercised by the granting authority in the decision to grant a subsidy;
- (5) the extent of diversification of economic activities within the jurisdiction of the granting authority; and
- (6) the length of time during which the subsidy program has been in operation.⁷⁵

5. Pass-Through Subsidies

Where “the subsidies at issue are received by someone other than the producer of the investigated product, the question arises whether there is subsidization with respect to that product.”⁷⁶ In *US—Softwood Lumber*, the Appellate Body made three observations:

- (1) “financial contributions by the government to the production of *inputs* used in manufacturing products subject to an investigation are not, in principle, excluded from the

71. EC—Large Civil Aircraft AB, *supra* note 67, ¶ 943 (citing US—Anti-Dumping and Countervailing Duties China, *supra* note 70, ¶ 367).

72. *Id.*

73. EC—Large Civil Aircraft AB, *supra* note 67, ¶ 943 (citing US—Anti-Dumping and Countervailing Duties China, *supra* note 70, ¶ 368).

74. Appellate Body Report, *United States – Definitive Anti-Dumping and Countervailing Duties on Certain Products from China*, ¶ 367 WTO Doc. WT/DS379/AB/R (adopted Mar. 11, 2011).

75. SCM Agreement, *supra* note 29, art. 2.1(c).

76. US—Softwood Lumber AB, *supra* note 43, ¶ 139 (internal quotation marks omitted).

- amount of subsidies that may be offset through the imposition of countervailing duties on the *processed product*”;⁷⁷
- (2) where “the producer of the input is not the same entity as the producer of the processed product, it cannot be presumed . . . that the subsidy bestowed on the input passes through to the processed product”;⁷⁸ and
 - (3) in such cases, a “pass through” analysis is required to determine to “what extent subsidies on inputs may be included in the determination of the total amount of subsidies bestowed upon processed products.”⁷⁹

Further, the Appellate Body stated that “a pass-through analysis is required where a subsidy is bestowed *indirectly* on producers of products subject to the investigation. . . .”⁸⁰ Accordingly, where an entity *other* than a producer of subject products receives a subsidy “and that entity subsequently sells inputs to producers of subject products, the investigating authority is required to determine whether at least some of that subsidy is passed through in the sale to the producers of such products.”⁸¹

A benefit may be presumed to be extinguished by an arm’s length sale.⁸² At the same time, this is a rebuttable presumption.⁸³ An investigating authority or a panel may consider “the ability of governments to obtain certain results from markets by shaping the circumstances and conditions in which markets operate.”⁸⁴ However, such analysis is not required with respect to vertically integrated producers or where the recipient and the investigating authority are not operating at arm’s length.

Overall, where a regulatory structure results in cheaper, environmentally harmful energy input into production, it would not for that reason alone be captured by the SCM Agreement. Rather, it must be shown that through government action, an input is being provided, directly or

77. *Id.* ¶ 140.

78. *Id.*

79. *Id.*

80. US—Softwood Lumber AB, *supra* note 43, ¶ 129.

81. *Id.*

82. Appellate Body Report, *United States—Countervailing Measures Concerning Certain Products from the European Communities*, ¶ 126, WTO Doc. WT/DS212/AB/R (adopted Dec. 9, 2002) [hereinafter US—Certain Products from EC AB].

83. *Id.* ¶ 127.

84. Although the Appellate Body made this observation in the context of privatizations, the observation holds true in general terms. *See id.* ¶ 124.

indirectly, to a producer and that the producer is not paying adequate remuneration for that input.

IV. THE SCM AGREEMENT AND SECTORAL EXCLUSIONS WITHIN AN ETS

In this section, we address ETSs that have sectoral exclusions that are not otherwise covered by other forms of carbon pricing or taxation: that is, we are concerned with the removal of a sector not otherwise carbon-regulated from the market mechanisms of pricing carbon pollution through an ETS. Such exclusions typically are in respect either of carbon-intensive power generation or of sectors with significant carbon-intensive power input requirements.

We open our analysis with two framework observations. First, we recognize that many WTO Members might well object to a line of analysis that would imply incorporating global environmental standards, and especially those related to climate change, into the WTO through the “backdoor” of the SCM Agreement. Such objections are likely to be based on two foundational principles of trade agreements: for one, a country’s tax and regulatory regime, including the management of its own natural resources and environment, is an aspect of its competitive advantage (or disadvantage).⁸⁵ A Member seeks, and gives, economic concessions in the context of trade negotiations based on these considerations. Indeed, the negotiators of the SCM Agreement did turn their minds to “the environment” - albeit in a different form⁸⁶ - but even then, subjected the provision to a sunset clause.⁸⁷ For another, and as a corollary, where a party to a trade agreement does not agree to specific obligations in respect of such matters, other parties to the agreement should not seek, and must not obtain, such concessions through dispute settlement. This core principle—essentially, one of good faith—is specifically captured in the WTO Agreement,⁸⁸ but should be treated as axiomatic in all trade negotiations.

Second, in *US – Export Restraints*, the panel found that the universe of subsidies is limited to those measures falling strictly within the terms of

85. For a fuller analysis, see RAMBOD BEHBOODI, *INDUSTRIAL SUBSIDIES AND FRICTION IN WORLD TRADE: TRADE POLICIES OR TRADE POLITICS* 9 (Routledge, 1994).

86. SCM Agreement, *supra* note 29, at art. 8.2(c) (“assistance to promote adaptation of existing facilities to new environmental requirements imposed by law and/or regulations which result in greater constraints and financial burden on firms . . .”).

87. *Id.* art. 31.

88. DSU, *supra* note 30, at art. 3.10.

Article 1 of the SCM Agreement, and not all measures that in some way have the effect of benefitting an industry or an enterprise.⁸⁹

In this light, we do not propose a radical departure from jurisprudence. This Article connects established cases that have previously existed in apparently watertight compartments. Our analysis comprises the following analytical steps:

- (1) there is no conceptual distinction between air that is free of pollutants and air that is free of excessive greenhouse gases, and each is a natural resource;
- (2) natural resources are goods within the meaning of the SCM Agreement;
- (3) clean air is made available to industry by the government, because, as part of the environment, clean air is under the overall control of the state and clean air is an input into production;
- (4) where the provision of clean air is not remunerated adequately, there is a subsidy;
- (5) in terms of power generation, not all production of electricity consumes clean air; any subsidy found to exist with respect to the consumption of clean air would be specific to carbon-producing energy producers; and
- (6) the subsidy is then directly made to or passed through to downstream producers that use subsidized electricity.

A. *Clean Air is a Good*

The first element in a subsidy determination is “financial contribution.”⁹⁰ In this case, the analysis would be under Article 1.1(a)(1)(iii): whether the government is providing a “good.”⁹¹ Air in itself is a “good”: it is tradeable and indeed, traded. At issue is whether unpolluted or clean air in its natural state, rather than air more broadly,⁹² constitutes a good within the meaning of the SCM Agreement. In the light of the wide scope of the terms “good,” “*bien*,” and “*bienes*,” as discussed in *US—Softwood Lumber*, nothing should *a priori* exclude “clean

89. *US—Export Restraints*, *supra* note 34, ¶ 8.69.

90. *Id.* art. 1.1(a)(1).

91. *Id.* art. 1.1(a)(1)(iii).

92. Emitting carbon dioxide or methane, or other greenhouse gases or pollutants, into the air does not render air no longer air. Rather, air becomes polluted, contaminated, or simply, dirty air.

air” from falling within the meaning of a good in Article 1.1(a)(1)(iii) of the SCM Agreement.

Supporting this assessment, in *US—Softwood Lumber*, the question was not whether trees, once harvested, are goods, but instead whether the trees, *before* harvesting, are goods.⁹³ That is, are the trees goods within the meaning of Article 1.1(a)(1)(iii) while they remain rooted to the ground as a public, natural resource? The Appellate Body held that standing timber, in its natural state and *as a natural resource*, constituted a good within the meaning of the SCM Agreement.⁹⁴ In this sense, at issue is whether clean air, regardless of whether it has been commoditized or removed from its natural state, is nonetheless a “good” that is “consumed”, in particular in the power generation process.

Jurisprudence on what constitutes “natural resources” under the GATT, specifically under Article XX, provides additional support for the proposition that *clean* air in the atmosphere, which is capable of being “consumed” through pollution, is a good distinct from “air” as a tradeable commodity. In *US—Reformulated Gasoline*, the panel found that “clean air” is an exhaustible natural resource:

In the view of the Panel, clean air was a resource (it had value) and it was natural. It could be depleted. The fact that the depleted resource was defined with respect to its qualities was not, for the Panel, decisive. Likewise, the fact that a resource was renewable could not be an objection. A past panel had accepted that renewable stocks of salmon could constitute an exhaustible natural resource. Accordingly, the Panel found that a policy to reduce the depletion of clean air was a policy to conserve a natural resource within the meaning of Article XX(g).⁹⁵

The complainants, Venezuela and Brazil, did not appeal this finding. In interpreting and applying the second condition of Article XX(g)—“made effective in conjunction with”⁹⁶—the Appellate Body confirmed the panel’s finding in two ways. First, the Appellate Body characterized the measures at issue as “restrictions on the *consumption or depletion of*

93. *US—Softwood Lumber AB*, *supra* note 43, ¶ 57.

94. *Id.* at ¶ 67.

95. Panel Report, *United States—Standards for Reformulated and Conventional Gasoline*, ¶ 6.37, WTO Doc. WT/DS2/R (adopted Jan. 29, 1996) [hereinafter *US—Reformulated Gasoline*].

96. General Agreement on Tariffs and Trade, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194 art. XX(g)(3) [hereinafter GATT].

clean air by regulating the domestic production of ‘dirty’ gasoline.”⁹⁷ Second, the Appellate body rejected an “effects-based” approach to determining whether a measure is “primarily aimed” at conservation of natural resources.⁹⁸ The Appellate Body stressed that “in the field of conservation of exhaustible natural resources, a substantial period of time, perhaps years, may have to elapse before the effects attributable to implementation of a given measure may be observable.”⁹⁹ Thus, clean air is “consumed” when pollutants are released into it; and, that consumption need not be measurable immediately.

The scope of the phrase “exhaustible natural resources” was more fully argued before the Appellate Body in *US—Shrimp*. In that dispute, the complainants, relying in part on the drafting history of the GATT, argued that the phrase referred to “finite resources such as minerals.”¹⁰⁰ The Appellate Body was not convinced. It noted that the text of the provision did not limit it to *minerals* or non-living natural resources.¹⁰¹ Crucially, it also stressed that Article XX(g) “must be read by a treaty interpreter *in the light of contemporary concerns of the community of nations about the protection and conservation of the environment.*”¹⁰² Accordingly, “in line with the principle of effectiveness in treaty interpretation, measures to conserve exhaustible natural resources, whether *living* or *non-living*, may fall within Article XX(g).”¹⁰³

Taking into account the above, the following is jurisprudentially unassailable: (1) the terms “goods,” “*bien*,” and “*bienes*” cover a wide range of tangibles and intangibles, as well as chattel and immovables—essentially, anything of value or capable of holding value; (2) air is, as such, a “good;” (3) clean air has value; (4) clean air is a “natural resource” that is susceptible to “consumption,” depletion, or exhaustion through the release of pollutants into it, *e.g.*, carbon dioxide and methane, and there is international scientific consensus that unrestricted

97. Appellate Body Report, *United States—Standards for Reformulated and Conventional Gasoline*, ¶ 21, WTO Doc. WT/DS2/AB/R (adopted Apr. 29, 1996) (emphasis added).

98. *Id.*

99. *Id.*

100. Appellate Body Report, *United States—Import Prohibition of Certain Shrimp and Shrimp Products*, ¶ 127, WTO Doc. WT/DS58/AB/R (adopted Oct. 12, 1998) [hereinafter *US—Shrimp AB*]. While at issue was the finiteness of “exhaustible natural resources” and whether “living” things were also natural resources, the complainants’ emphasis on “minerals” and the negotiating history of the GATT is instructive. Had it succeeded, it could well have scaled back on the findings of the panel in *US—Reformulated Gasoline*.

101. *Id.* ¶ 128.

102. *Id.* ¶ 129 (emphasis added).

103. *Id.* ¶ 131 (emphasis in original).

release of carbon dioxide, methane, and other greenhouse gases constitute climate change pollutants and deplete clean air¹⁰⁴; and (5) treaty terms should be interpreted “in light of the contemporary concerns of the community of nations about the protection and conservation of the environment.”¹⁰⁵ Finally, while there are questions about the best means of tackling climate change, in both scientific¹⁰⁶ and policy¹⁰⁷ terms, it should be uncontroversial to argue that carbon emissions constitute a “contemporary concern of the community of nations.”¹⁰⁸

B. A Government “Provides” Clean Air

A financial contribution exists under Article 1.1(a)(1)(iii) where a government provides a good.¹⁰⁹ The Appellate Body has defined the term “provides” as to “supply or furnish for use; make available.”¹¹⁰ The question is whether a government can *provide* clean air as a good to its polluting industries.

At least three arguments may be made against the proposition that the government provides clean air to its polluting industries. First, because air is all around us, it is not capable of being provided by a government unless somehow commodified.¹¹¹ Second, unlike in *US—Softwood Lumber*, a producer is not given an “exclusive” right to consume or deplete clean air.¹¹² (In *US—Softwood Lumber*, the Appellate Body observed that “stumpage arrangements give tenure holders a right to

104. *Scientific Consensus: Earth’s Climate Is Warming*, NAT’L AERONAUTICS AND SPACE ADMIN., <https://climate.nasa.gov/scientific-consensus/> (last visited Feb. 21, 2019) (“Multiple studies published in peer-reviewed scientific journals show that 97 percent or more of actively publishing climate scientists agree: climate-warming trends over the past century are extremely likely due to human activities”); see also *Air Pollution: Current and Future Challenges*, ENVTL. PROT. AGENCY, <https://www.epa.gov/clean-air-act-overview/air-pollution-current-and-future-challenges> (last visited Feb. 19, 2019) (“EPA determined in 2009 that emissions of carbon dioxide and other long-lived greenhouse gases that build up in the atmosphere endanger the health and welfare of current and future generations by causing climate change and ocean acidification”).

105. *US—Shrimp AB*, *supra* note 100, ¶ 129.

106. See generally *Intergovernmental Panel on Climate Change*, IPCC.CH, <https://www.ipcc.ch/> (last visited July 21, 2019).

107. See generally *Kyoto Protocol*, *supra* note 18; see also *Paris Agreement*, *supra* note 1.

108. *US—Shrimp AB*, *supra* note 100, ¶ 129.

109. *SCM Agreement*, *supra* note 29, art. 1.1(a)(1)(iii) (“[A] subsidy shall be deemed to exist if . . . a government *provides* goods . . .”) (emphasis added).

110. *EC—Large Civil Aircraft AB*, *supra* note 67, ¶ 963 (citing *Provides*, SHORTER OXFORD ENGLISH DICTIONARY (6th ed. 2007)).

111. A similar argument could be made with respect to water—by letting ships use a government’s maritime waters, a government would be providing water to its shipping industry.

112. *US—Softwood Lumber AB*, *supra* note 43, ¶ 75.

enter onto government lands, cut standing timber, and enjoy exclusive rights over the time that is harvested.”¹¹³) Third, the absence of a regulatory framework for carbon emissions does not, in itself, imply the existence of an “exchange of rights and obligations”: the Appellate Body has noted that, with respect to a purchase of goods, in considering the various elements of a government purchasing goods, “all these aspects are part of a broader transaction that involves an exchange of rights and obligations.”¹¹⁴ Moreover, letting an industry pollute at will does not involve a positive act, *e.g.*, entering into an agreement to give the right to exploit a natural resource to a private entity.¹¹⁵

In this respect, the limiting observations of the Appellate Body in *US—Softwood Lumber* are instructive. Responding to Canada’s concerns that “make available” is an overbroad interpretation of “provide,” the Appellate Body noted that:

[T]he concept of “making available” or “putting at the disposal of,” which requires there to be a reasonably proximate relationship between the action of the government providing the good or service on the one hand, and the *use or enjoyment of the good or service by the recipient* on the other. Indeed, a government must have some control over the *availability* of a specific thing being “made available.”¹¹⁶

Another analogy is the mobile telephony spectrum, or the right to use a frequency in space. Whether a good or a service, there is no doubt that government “provides” the spectrum when it issues a license to telecommunication companies to use that spectrum.¹¹⁷ In this specific field, ETSs have already been put in place in a number of different jurisdictions, with emissions credits serving, essentially, as permits to consume or deplete clean air.¹¹⁸

The implementation of an ETS creates the circumstances¹¹⁹ in which clean air is provided to an emitter – be it an energy generator or a

113. *Id.*

114. Canada—FIT, *supra* note 65, ¶ 5.131.

115. *But cf.* US—Softwood Lumber AB, *supra* note 43.

116. US—Softwood Lumber AB, *supra* note 43, ¶ 71.

117. *See, e.g.*, Federal Communications Commission, *Licensing*, FCC.GOV, <https://www.fcc.gov/licensing-databases/licensing> (last visited Feb. 21, 2019).

118. *See supra* Section II.

119. EC—Large Civil Aircraft AB, *supra* note 67, ¶ 965. The Appellate Body observed:

While government action concerning the creation of a good or service may not be relevant if that good or service is not ultimately provided to a recipient, we do not

producer. Under an ETS, each emitter of greenhouse gases must pay a fee for placing carbon molecules into the atmosphere. High-carbon gases such as methane would, accordingly, attract a higher emission fee than low-carbon gases such as carbon dioxide. Emissions are measured and priced in weight of carbon. However, the underlying concern is concentration of carbon-based gases in the atmosphere—that is, within a given volume, the *displacement* of non-carbon, unpolluted air with greenhouse gases, or the effective depletion or consumption of clean air. Importantly, the “provision” of clean air in this sense is the same. Whether the ETS mandates an emitter to pay a price for the greenhouse gas it emits on the one hand while allowing another emitter to emit without regulation on the other, each emitter is “provided” clean air.

Accordingly, the proper characterization of “provides” goods would involve the following four elements: (1) there is a good; (2) each government has at least some control over that good within its sovereign territory; (3) the government grants control over the good to another entity or permits another entity to have access to that good; and (4) the good in question is consumed by that other entity. “Consumption” in this context would include reselling the input, directly using the input, or otherwise consuming or depleting the input as a result of the production process.

Applying these elements to, for example, coal-based electricity generators, a government “provides a good” because (1) clean air is a good; (2) each government has sovereign control over its environment and some control over the quality of that environment, including clean air; (3) generators deplete or consume clean air by infusing it with greenhouse gases; and (4) they can do so because, whether through absence of regulation, affirmative exclusion from an existing regulatory regime, or positive action, they are permitted to consume clean air by the government that has sovereign control over it. Thus, the provision of clean air through a government’s ETS falls squarely within the meaning of Article 1.1(a)(iii) of the SCM Agreement.

understand on what basis such actions would necessarily be excluded in assessing what has been provided. Recalling the meaning of the term “provide” set out above—supply or furnish for use; make available—we consider that this term permits taking into account what was involved in supplying or furnishing that infrastructure. The creation of infrastructure is a precondition, and thus necessary, for the provision of that infrastructure. We therefore do not view the use of the term “provision” in Article 1.1(a)(1)(iii) as excluding the possibility that circumstances of the creation of infrastructure may be relevant to a proper characterization of what it is that is provided.

C. *Providing Clean Air for Consumption Without Adequate Remuneration Confers a Benefit*

For a subsidy to exist, the financial contribution in question—in this instance, the provision of a good by a government—must be found to confer a benefit to the recipient.¹²⁰ The Appellate Body has found that “[a] benefit does not exist in the abstract, but must be received and enjoyed by a beneficiary or a recipient.”¹²¹

One way to assess whether the provision of a good, in this case clean air, confers a benefit is to “examine whether, under the benchmark provided in Article 14(d) of the SCM Agreement,¹²² the remuneration obtained by a government was less than adequate “in relation to prevailing market conditions for the good or service in question in the country of provision.”¹²³ Typically, this requires a consideration of whether the recipient is placed in a more advantageous position than it otherwise would have been absent the financial contribution.¹²⁴

The “good” being provided to, for example, carbon-intensive electricity generators is “clean air,” which is depleted through the emission of greenhouse gases, among other pollutants. To determine whether a benefit was conferred, the relevant market in which the good was provided must be defined.

Here, before the implementation of an ETS, there is arguably no domestic market in which the provision of clean air can be benchmarked. However, with the implementation of an ETS, a government creates a market in which clean air is regulated and traded—and priced. The ETS is the prevailing market within which it may be determined what an excluded emitter would otherwise have had to pay if it were included in the ETS. Thus, for an emitter that has been excluded from the ETS and is otherwise paying nothing for the clean air it consumes, the price the emitter would otherwise have to pay is the price at which the ETS would have been set had that emitter been included in the scheme. Accordingly, the benefit conferred to the excluded emitter is the difference between what it currently pays, which is zero, and the price it would pay for the emissions credits, which are purchased in the event that the emitter must exceed its established emissions allowance.

120. SCM Agreement, *supra* note 29, art. 1.1(b).

121. Canada—Aircraft AB, *supra* note 58, ¶ 154.

122. Canada—FIT, *supra* note 65, ¶ 5.160.

123. *Id.* ¶ 5.226.

124. Panel Report, *Canada—Measures Affecting the Export of Civilian Aircraft*, ¶ 9.112, WTO Doc. WT/DS70/R (adopted Apr. 14, 1999) [hereinafter Canada—Aircraft].

D. *Regulatory Failure May Be Specific*

To be countervailable, a subsidy must be found to be specific.¹²⁵ Article 2 sets out the ways in which a subsidy may be specific.¹²⁶ The first two methods for determining whether a subsidy is specific are (1) whether the government explicitly limited access to a subsidy or (2) whether the eligibility criteria for a subsidy is objective and clearly spelled out in law.¹²⁷ Article 2.1(c) sets out other factors to be considered in the absence of any appearance of specificity.¹²⁸

Where regulatory failure by Members is endemic and wide-spread, it might well be challenging to establish that any subsidy arising out of this unregulated or under-regulated “provision of clean air” is specific in law or in fact. Also, at least until the Kyoto Protocol, nothing about greenhouse gas emissions set them apart as a distinct class of pollutants, such that failure to regulate greenhouse gases would amount to a specific subsidy.¹²⁹ More to the point, in respect of many developing and less developed countries, regulation of greenhouse gas emissions was arguably not even a concern until the Paris Agreement in 2016.¹³⁰

The purpose of an ETS is reduction of carbon emissions. There are at least three points at which emissions may be controlled:

- (1) direct regulation of power generation: for example, solar, wind, and hydro-electricity do not emit greenhouse gases in generating electricity;
- (2) life-cycle costing of greenhouse gases: material used in the generation of carbon-neutral energy, for example, or in the production of goods; and
- (3) direct carbon footprint of the use of a product (such as an automobile).

125. SCM Agreement, *supra* note 29, art. 1.2.

126. *Id.* art. 2.1

127. *Id.* arts. 2.1(a)-(b).

128. *Id.* art. 2.1(c).

129. It was not until the adoption of the Kyoto Protocol in 1997 that obligations were set for governments to reduce the release of greenhouse gases into the atmosphere by way of market-based approaches, such as an ETS. Developing and least developed countries were exempted from these obligations. Up to and until that point, the idea that the non-regulation of greenhouse gases would result in a specific subsidy likely could not have been considered. *See History of UN Climate Talks*, CTR. FOR CLIMATE AND ENERGY SOLS., <https://www.c2es.org/content/history-of-un-climate-talks/> (last visited June 20, 2019).

130. *See* Paris Agreement, *supra* note 1.

A specificity analysis will thus depend on the structure of the ETS at issue. For example, if an ETS designed to regulate directly power generators using fossil fuels, which would be to encourage the adoption of alternative forms of producing energy, *e.g.*, solar, wind, and hydroelectricity, the specificity analysis would look to which conventional power generators may be exempted from that regulation. In other words, specificity may be found if exempting those conventional power generators from participating in the ETS was the result of, for example, legislation limiting the provision of clean air to those power generators.

V. CONCLUSION

In closing, we acknowledge a potential challenge: our analysis in this paper presupposes an ETS and addresses only potential exclusions from it. The argument may be made that the threat of countervailability to a limited ETS might well inhibit the establishment of any ETS. We offer the following two observations. First, an ETS that has important sectoral exclusions will have significant, and distorting, environmental and economic consequences. The reason is simple and is rooted in basic economics: within a national economy that *somehow* prices carbon, where a sector does not have to pay for its carbon footprint, resources will be shifted from carbon-priced sectors to the free-carbon sector. The more significant the carbon footprint of the sector, the more significant the diversion and, more important, the more distorting the environmental impact because of the active encouragement to shift resources.¹³¹ In this sense, any trade distortions that would be caught by WTO disciplines would be secondary to the core regulatory failures that exclusion of important sectors from an ETS would entail by shifting investment and resources from regulated to unregulated sectors.

Second, every environmental exception in the WTO Agreement is already subject to an “arbitrary or unjustifiable discrimination” limitation.¹³² Accordingly, within the context of the WTO Agreement as a whole, it should not come as a surprise that sectoral exclusions from otherwise general environmental measures could give rise to additional scrutiny. Members are not *required* to have environmental protection

131. For a concrete example, see International Council on Mining & Metals (ICMM), *The Cost of Carbon Pricing: Competitiveness Implications for the Mining and Metals Industry*, INT’L INST. FOR SUSTAINABLE DEV., 43, https://www.iisd.org/sites/default/files/publications/icmm_the_cost_of_carbon_pricing.pdf (lasted visited June 20, 2019). For a well-captured “economic signal” introduction, see Carbon Pricing Dashboard, *What is Carbon Pricing?*, THE WORLD BANK, <https://carbonpricingdashboard.worldbank.org/what-carbon-pricing> (last visited June 20, 2019).

132. See GATT, *supra* note 96, art. XX(g)(1).

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measures in place, but if they do and if they seek to justify them under the general exceptions, the measures must meet the limitation mentioned. In this sense, our application of the SCM Agreement to ETSs already established (rather than, for example, to the *failure* by a Member to establish an ETS) is faithful to the general scheme of the WTO Agreement.