Deok-Young Park *Editor*

Legal Issues on Climate Change and International Trade Law

Springer

Legal Issues on Climate Change and International Trade Law

Deok-Young Park
Editor

Legal Issues on Climate Change and International Trade Law

Springer

Editor
Deok-Young Park
Law School
Yonsei University
Seoul, Republic of Korea

ISBN 978-3-319-29320-2 ISBN 978-3-319-29322-6 (eBook)
DOI 10.1007/978-3-319-29322-6

Library of Congress Control Number: 2016933764

Printed on acid-free paper

This Springer imprint is published by Springer Nature
The registered company is Springer International Publishing AG Switzerland

Preface

The most challenging issue we are facing today is climate change. Climate change is a multifaceted problem in which political, environmental, economic, and social issues are tightly interlinked. This multifaceted feature of transboundary ecological disasters cannot be resolved by tackling only one of these aspects. Therefore, it is imperative that international society responds to this issue in a coordinated manner that encompasses the various dimensions related to climate change.

Rapid industrialization, free trade, and globalization are often criticized as the major reasons for climate change. International trade has increased since the mid-twentieth century. The growth of international trade has significantly contributed to the substantial increase in greenhouse gas concentration in the atmosphere. In contrast, there are many who argue that a trade regime may facilitate the trade of green goods and services and thus contribute to curbing the fast growth of greenhouse gas emissions.

Together with my team members in the Social Science Korea (SSK) Center for Climate Change and International Law, I have been working to find a way to coordinate a climate change regime with the current international trade regime. As part of this long journey, we hosted the "International Seminar on Climate Change & Energy and International Trade Law" on August 28–29, 2014, to discuss current and future issues related to the WTO and climate change policies, as well as solutions to the problems related to climate change. This book is composed of a collection of those manuscripts presented at the seminar by prestigious experts in international trade law.

This book consists of four parts. The first part, by Gabrielle Marceau, investigates the interface between the trade and climate change regimes. She focuses on the rules of the General Agreement on Tariffs and Trade (GATT) such as national treatment, most-favored-nation treatment, and Article XX exceptions addressing the interaction of these rules with greenhouse gas mitigation policies and measures. In addition to GATT, she also discusses the Agreement on Technical Barriers to Trade (TBT) and some WTO disciplines relevant to climate change policies. Based on a comprehensive survey of interlinkages between these two different regimes,

she emphasizes that a greater degree of international cooperation would allow mitigation policies to be implemented across many countries.

The second part covers legal issues between the WTO and domestic climate change policies in several countries. Soyoung Lee, ZhongXiang Zhang, Mitsuo Matsushita, and Wen-chen Shih have contributed to this part. Soyoung Lee examines the applicability of the WTO regime, in particular the TBT Agreement, to eco-labeling rules in response to climate change by exploring three cases: *US-Clove Cigarettes, US-Tuna II,* and *US-COOL*. She points out that the key to a WTO-compatible eco-labeling policy is the establishment of a measure that maintains and protects free competition between imported products and domestic-like products.

ZhongXiang Zhang covers border carbon adjustment (BCA) measures in the form of emissions allowance requirements (EAR) under the proposed emission trading policy in the USA. The EAR can bring about conflicts between the USA and emerging economies, such as China, that do not have strict policies to limit greenhouse gas emissions. This chapter analyzes the implications of proposed EARs and China's response and gives meaningful recommendations to both countries—the USA needs to coordinate its BCA measures with WTO provisions and China needs to effectively respond to the policy.

Mitsuo Matsushita comprehensively discusses the domestic as well as the international effort to reduce greenhouse gases in Japan. The effort includes laws and policies relevant to climate change, an initiative in the private sector to cope with climate change, and the Joint Crediting Mechanism (JCM) and Bilateral Offset Credit Mechanism. He addresses future issues related to Japan's response to climate change in terms of domestic emission markets, compatibility of the emission market with other carbon markets, the risk of presumable subsidies under the JCM, and the applicability of border tax adjustment to JCM projects.

Wen-chen Shih reviews Taiwan's legal and policy framework for climate change mitigation. With an emphasis on economic incentive measures such as emission trading schemes, energy taxes, and the feed-in-tariff, this chapter examines the potential interaction of these tools with the WTO rules.

The third part discusses the future agenda on trade and climate change issues. The first chapter of this part focuses on potential investor-state disputes involving the Republic of Korea's Emission Trading Scheme (KETS). The authors of this chapter, Deok-Young Park and Yonjong Yoon, analyze how carbon emission allowances may qualify as covered investments under those free trade agreements and investment treaties concluded by the Korean government and suggest that this ambivalence provides leeway for foreign investors to invoke those agreements and seek damages pertaining to their allowances under the KETS through an investor-state dispute settlement process.

The following chapter by Luca Rubini provides insights into the need to rethink existing disciplines in light of the current economic, political, and environmental challenges. By focusing on the *Canada-Renewable Energy/FIT* case, he explores the interaction between the WTO and renewable energy subsidies. Rather than simply criticizing adjudicating bodies such as the WTO Dispute Settlement Body

(DSB), he argues that lawmakers should take the lead and clarify the rules in order to avoid adverse legal interpretations.

In the final part, Jaemin Lee is dedicated to provide implications on green subsidies and countervailing duty investigation by exploring the investigation of *Large Residential Washers from the Republic of Korea*. This chapter provides meaningful insights into green subsidies that are provided to eligible technologies relating to the New Growth Engine Industry in Korea. He argues that subsidy norms should be coordinated with international trade regimes.

This book is sponsored by the National Research Foundation of Korea Grant from the Korean government. Above all, it would have been impossible to get this book published without the invaluable contributions of the authors. Furthermore, I am grateful to Professor Taehwa Lee for her effort to successfully host the Seminar, and I also would like to extend my gratitude toward Dr. Hana Kim for all of the tasks she has done for this book. Last but not least, I want to express my sincere appreciation to Springer for allowing this book to come into the world.

Seoul, Republic of Korea
Late Autumn, 2015

Deok-Young Park

Acknowledgment

This book has been supported by the National Research Foundation of Korea Grant funded by the Korean government (NRF-2013S1A3A2054969).

Contents

Part I Climate Change Issues Within the WTO

The Interface Between the Trade Rules and Climate Change Actions 3
Gabrielle Marceau

Part II Domestic Climate Change Policies and the WTO

Compatibility of Eco-Labeling Scheme with WTO and Its Potentially Conflicting Impacts 43
Soyoung Lee

The U.S. Proposed Carbon Tariffs, WTO Scrutiny and China's Responses 67
ZhongXiang Zhang

Law and Policy in Combating Greenhouse Gases in Japan 93
Mitsuo Matsushita

Taiwan's Climate Change Mitigation Policies and Their Potential Interaction with the WTO Rules: Focusing on Economic Incentive Measures 109
Wen-Chen Shih

Part III Future Agenda of the Trade for Climate Change Issues

Making Allowances for Carbon Emission Allowances in Investor-State Disputes: A Case Study of the Republic of Korea 133
Deok-Young Park and Yonjong Yoon

'The Good, the Bad, and the Ugly.' Lessons on Methodology in Legal Analysis from the Recent WTO Litigation on Renewable Energy Subsidies 153
Luca Rubini

Part IV Conclusion

Green Subsidies and Countervailing Duty Investigations: Some Implications from Recent Examples of Korea 197
Jaemin Lee

Contributors

Jaemin Lee is a professor of law at the Seoul National University School of Law. Upon graduation from the College of Law, Seoul National University in 1992, he joined the Korean Ministry of Foreign Affairs and Trade as a career foreign service officer. His post in the ministry included deputy directors of the Treaties Division and the North American Trade Division. He also practiced law with a law firm in Washington, D.C., as an associate attorney of the firm's international trade law group. He has authored various articles, book chapters, and books in English and Korean on topics of international law and international trade law.

Soyoung Lee is an attorney at Crouser & Suh PLLC, an international business and immigration law firm with its principal office in Miami, Florida, and associate offices in Boston, Washington, D.C., and Tallahassee. She has been the managing partner of Boston office since 2012. Before joining the legal profession, she was a devoted researcher in the field of international trade law and international legal issues concerning climate change. She has a PhD in international trade law from Yonsei University located in South Korea. Following her PhD degree, she went on to pursue further studies in international trade and business law at Georgetown University. She currently practices exclusively in international business and immigration law and is an active member of the American Bar Association and American Immigration Lawyers Association.

Gabrielle Marceau is a counselor in the Legal Affairs Division of the WTO Secretariat. Her main function is to advise panelists in WTO disputes, WTO members, the Director-General's Office, and the Secretariat on WTO-related matters. She is also an associate professor at the Law Faculty of the University of Geneva and has previously been visiting professor at the Graduate Institute in Geneva, the Sorbonne in Paris, Monash University in Melbourne, the World Trade Institute in Bern, and others. She is frequently invited to lecture at international conferences and law schools around the world. Professor Marceau is president of the Society of International Economic Law (SIEL) and is also involved with other associations and groups promoting international law. Before joining the

GATT Secretariat, she worked in private practice in Quebec, Canada, mainly in labor and insurance law. Professor Marceau has published extensively in WTO law and international economic law.

Mitsuo Matsushita is a professor emeritus at Tokyo University and counsel to Nagashima Ohno & Tsunematsu, a leading international law firm in Tokyo. He served on the Appellate Body from 1995 to 2000. Having gained a PhD degree from Tulane University, USA, and a DJur degree from Tokyo University, Professor Matsushita went on to become widely acknowledged as one of the most authoritative Japanese scholars in the field of international economic law. In his academic career, he has held professorships at Sophia University and Tokyo University. He has been a visiting professor at Harvard University, Georgetown University, University of Michigan, Columbia University, and at the College of Europe in Bruges, Belgium. He has written many publications on various aspects of international trade and competition and investment law. Professor Matsushita has been also attached to the Ministry of Finance and the Ministry of International Economics and Trade as a member of various councils dealing with telecommunications, customs and tariffs, export and import transactions, and industrial property. He serves as a member of the Office of the Ombudsman of Trade and Investment, which is part of the Japanese government and deals with market access issues.

Deok-Young Park is a professor of international economic law at Yonsei Law School. He served as president of the Korean Society of International Economic Law in 2012 and vice-president of the Korean Society of International Law in 2011. Currently, he is a member of FTA Consulting Committee for the Korean Ministry of Industry, Trade and Energy, and a member of Advisory Committee of Legislation for Korean National Assembly. He is editor-in-chief of *Korean Arbitration Studies*. He is much interested in WTO and World Trade Law, International Investment Law, European Union Law, International Intellectual Property Law, and International Legal Issues on Climate Change.

Luca Rubini is reader in International Economic Law at Birmingham Law School. Previously, he was a lecturer at the University of Leicester and before that legal secretary to Sir Francis Jacobs QC, Advocate General at the European Court of Justice in Luxembourg. Luca had held visiting positions in various academic institutions in the UK, USA, Switzerland, and Italy, including King's College London, the Institute of International Economic Law (Georgetown University), the European University Institute, Bocconi University, and the World Trade Institute (University of Berne). He is a fellow of the Centre of European Law and King's College London and a visiting professor at ASERI, the Graduate School of Economics and International Relations of the Catholic University, Milan, and at the World Trade Institute, MILE program. In the 2012–2013 academic year, he was a Robert Schuman Senior Research Fellow at the Global Governance Programme (GGP) of the European University Institute. This prestigious fellowship, which is for "established academics with an international reputation," is awarded by invitation only.

Wen-Chen Shih is a professor of law at the Department of International Business, National Chengchi University in Taiwan since 2010. She has an LLB degree from the National Taiwan University, an LLM degree from the London School of Economic and Political Science, and a PhD degree from the School of Oriental and African Studies. She is currently the commissioner of Taiwan's International Trade Commission (Ministry of Economic Affairs), the Committee Member of Taiwan's Wildlife Conservation Advisory Committee (Council of Agriculture), and the Committee Member of Chinese Taipei Pacific Economic Cooperation Committee (CTPECC). She is also the legal consultant for the "Trade and Environment Task Force" in Taiwan's participation in international economic matters, Bureau of Foreign Trade, Ministry of Economic Affairs. She has published 8 Mandarin and 6 English journal articles/book chapters in international environmental and international trade law, emissions trading, carbon tax, and climate change financial mechanisms between 2010 and 2015. She also published a book entitled *WTO, Climate Change and Energy* (in Mandarin) in 2013.

Yonjong Yoon is a master of law (LLM) candidate at Yonsei Law School and a research assistant of the SSK Center for Climate Change and International Law at Yonsei University.

Zhongxiang Zhang is a distinguished professor and chairman at the School of Economics, Fudan University, China. He is a Fellow of Asia and the Pacific Policy Society, Australia, and is serving as China Country Representative of the European Association of Environmental and Resource Economists, and on the academic committee of Paris-based IDDRI. He also is an adjunct senior fellow at East-West Center, Honolulu; a distinguished professor at the Chinese Academy of Sciences; an adjunct professor at the Chinese Academy of Social Sciences and University of Hawaii at Manoa; an advisor to Center for National Resource Economics Studies at Peking University; and a research associate at American University and Australian National University. He has authored over 200 publications and authored and edited 20 books. He is among the top 20 authors from Chinese universities in all branches of social sciences based on the first-authored articles in SSCI/A&HCI over 1956–2008 and is among the most cited authors by the IPCC Climate Change 2001 and 2007 and by Trade and Climate Change WTO-UNEP Report books and special issues of international journals.

Part I
Climate Change Issues Within the WTO

The Interface Between the Trade Rules and Climate Change Actions

Gabrielle Marceau

1 Introduction

As national and international policies are developed to mitigate climate change, concern is growing about the compatibility of climate change regimes with international trade rules. This potential source of tension has at least two dimensions. First, carbon leakage may occur where countries implement asymmetric climate policies. When an industry in one country assumes additional costs in order to reduce greenhouse gas (GHG) emissions and those same industries in other countries incur lesser (or zero) costs, this may affect geographical patterns of investment, production and trade. If climate-related changes in relative costs result in a shift of economic activity to less carbon-constrained jurisdictions, the cost-augmenting environmental efforts of the more constrained country would be affected. Emissions would not be reduced, but simply shifted to other national locations.

The second dimension is linked to the first. Industries in more carbon-constrained countries will feel aggrieved about additional competitive pressure from the same industries in less constrained countries. This will induce them to demand policy responses from their governments to redress this loss of competitiveness. Such policy responses, should they be forthcoming, would probably affect

Views expressed in this paper are those of the author and do not bind WTO Members or the WTO Secretariat. The author is most grateful to Susanna Waltman for all her work on this paper, and to Daniel Baker, Ludivine Tamiotti, and Tommaso Soave for their useful comments. Mistakes are only those of the author.

G. Marceau (✉)
Faculty of Law, University of Geneva, Geneva, Switzerland

The Legal Affairs Division of the WTO, 154 Rue de Lausanne, Geneva 1202, Switzerland
e-mail: Gabrielle.Marceau@wto.org

D.-Y. Park (ed.), *Legal Issues on Climate Change and International Trade Law*,
DOI 10.1007/978-3-319-29322-6_1

international trade—be they tax adjustments at the border, regulation, or subsidy.[1] The climate change regime under the United Nations Framework Convention on Climate Change (UNFCCC) may also impact the manner and form these responses take, particularly the principle of common but differentiated responsibilities and respective capabilities as enunciated therein.

Can or should the environmental and competitiveness aspects of this situation be de-linked? It seems improbable. In fact, to alleviate the tension between environmental and competitiveness concerns would require a great degree of international cooperation rather than national trade-related responses. Therefore, the possibility that governments will apply policies with a significant trade impact to address carbon leakage and competitiveness issues is very real and is thus the motivation of this paper, which provides an overview of certain WTO rules relevant to the interface between climate change policy and trade policy.[2]

In this paper, attention is focused first on General Agreement on Trade and Tariff (GATT) rules applicable to GHG-trade-related policies and measures (GHG related), particularly the national treatment and most-favoured-nation obligations and its Article XX exceptions. It addresses issues related to price-based and non-price based measures, and the issue of likeness, which is particularly relevant in the climate change context. The Agreement on Technical Barriers to Trade (TBT) and the policy flexibilities developed therein are subsequently discussed. Some other areas of WTO rules important in the climate change and trade policy discussion are briefly mentioned in Sect. 3—showing the direction to new research work needed. Finally broader policy concerns such as the food and trade nexus in the context of actions and reactions to climate change are not addressed at all. These include issues that may arise from emissions trading schemes, and the climate change, food and trade nexus.

When discussing the application of existing GATT/WTO rules to climate change related measures, it should be borne in mind that any analysis of the interface between trade rules and climate change rules should take into account the fact that the existing GATT and WTO rules were not drafted to address climate change problems and policies. This sometimes leads to legal awkwardness. For example, the basic GATT non-discrimination principle is applicable to the treatment of imported versus domestic products and is generally thought to prohibit distinctions that are based on processes and production methods which frequently are not product based. However, climate change related policies targeting GHG reductions often do not deal with products *per se* and generally address processes and production methods, while focusing on broader variables such as sectors, industries, firms or installations. The result is that these broader climate change

[1] Note that subsidies can be demanded and have been demanded independently of the situation of the industry in other countries. Industries affected by carbon-related regulation have requested subsidies and other benefits to assist them cope with the financial burden imposed by all new carbon regulation.

[2] The trade and WTO implications of other approaches to managing climate change policy internationally, such as an agreement on carbon taxes, are not addressed in this paper.

measures may discriminate among similar products on the basis of criteria not related to product. This will clash with the non-discrimination requirements of the GATT's national treatment and most-favoured nation provisions (Articles I and III of GATT), which tend to focus on product-related criteria when distinguishing among products. Of course, climate change related policies targeting GHG reductions might be permitted under the exceptions contained in Article XX of GATT. In this context, the recent interpretation of the provisions of the TBT offered by the Appellate Body (AB) seems to respond better to the regulatory distinctions called for by most climate change programmes, as discussed in Sect. 3 below.

A second example concerns border adjustments on exports. While the GATT traditionally allows a government to rebate or remit domestic taxes imposed on exported products (indirect taxes), it prohibits such treatment of domestic taxes on firms or industries (direct taxes) producing for export. Since climate change subsidies and taxes tend to target firms, sectors or nations rather than products *per se*, such measures could raise questions about the relevance of and consistency with WTO disciplines. This will be discussed in Sect. 2.1 below. Moreover, divergence between WTO rules and climate change action raises additional challenges when attempting to define comparable action between countries and comparable effects of GHG-related measures. This comparison of national actions on GHG-related measures is relevant in the application of basic principles such as the most-favoured nation and the national treatment principles but also when assessing the application of the Article XX exceptions of GATT. Such comparison is also relevant in the application of the TBT disciplines to technical regulation and label in GHG-related actions. Underlying all this is the question whether WTO Members (Members) manage to negotiate or implicitly accept varying approaches towards actions at the interface of trade and climate change policies, or whether the WTO dispute settlement system will be called upon to assess the WTO compatibility of specific GHG-related measures affecting trade.

2 GATT/WTO Market Access Rules Applicable to GHG-Related Policies and Measures

This section briefly examines the relevant GATT/WTO rules in the climate change context. It further outlines the exceptions under Article XX of GATT that are particularly relevant in the context of addressing climate change concerns.

2.1 Rules Under the GATT

In the climate change context, two types of (import or export) border adjustments may be deployed—price-based and non-price based restrictions or regulations. In the latter case, market access is restricted to products complying with specific

standards (e.g. the level of GHG emissions resulting from the production of an exported good), or compliance with certain other types of requirements (such as notification or reporting). In turn, price-based border adjustments can take two main forms—(i) border tax adjustments on imports and (ii) mandatory carbon offset purchases (of GHG emission permits or allowances by importers). Border adjustments can also be made on exports, including in the form of export tax rebates.

WTO rules do not restrict the set of taxes and regulations that a nation may impose domestically on products. But they do require non-discrimination in the application of such policies to domestic versus imported products—what is known as "national treatment", and among imported products—what is known as the "most-favoured nation principle". For example, nothing in the WTO prevents a nation from imposing a sales tax on imports from a country as long as it is applied to "like" domestic products and imported products from all other nations.

These WTO rules ensure that border measures are not disguised protection. Specifically, the rules allow a Member to impose taxes and regulations on imported goods that are "no less favourable" than those imposed on similar domestic products. While this sounds simple in theory, in practice it can be quite difficult. "Similarity", or so-called "likeness", between products and between treatment imposed on domestic and imported products is not always easy to identify when climate change measures such as taxes, permits and regulations are at stake.

2.1.1 National Treatment, Most-Favoured Nation Obligations and Scheduled Import Tariff in the GATT

GATT provisions regulate two types of governmental measures in the present context: border measures and internal (domestic) measures. Article II of GATT governs the imposition of import tariffs at the border, which thus apply only to imported products. Article III of GATT regulates the imposition of taxes and regulations on both imported and domestic products in prohibiting protectionism. Although Article II of the GATT provides that generally only tariffs should be imposed at the border of an importing Member, it also contains a list of other price-based measures that can be applied in addition to and independently from tariffs. These price-based measures include, notably, the application of a charge "equivalent" to a domestic taxes to imports.[3] This means that domestic taxes and regulations, otherwise governed by Article III of GATT, can be applied, or adjusted, at the border before the goods enter the market.

WTO rules applicable to border measures differ from those applicable to internal measures. Therefore, the first legal step when assessing WTO compatibility of a

[3] GATT Article II:2 also includes two other types of border (price) adjustment measures: (i) anti-dumping and countervailing duties (Article VI); and (ii) charges for services rendered (Article VIII). The provision on countervailing duties could become relevant in the context of climate change if collected against allegedly subsidized exports that result in injury to domestic industry. We discuss this situation in Section III of this paper.

GHG measure is to determine whether the measure at issue is a "border measure"—like tariff a—or an "internal measure (applied at the border)" in the form of a regulation.

If a GHG measure at issue is considered to be a price-based "border measure", the money collected via this GHG price-based measure must not breach the relevant tariff binding commitment of the importing country.[4] Note that the non-discrimination obligation of the most-favoured nation principle (MFN) of Article I is applicable to price-based border measures under Article II of GATT, and thus such GHG price-based border measure will also have to comply with the GATT Article I MFN obligation.

If a GHG-related measure is a domestic or internal measure, the rules of Article III on national treatment will apply. The main discipline of Article III of GATT on national treatment is that no imported product should be treated less favourably than a like domestic product. Environmental measures, and in particular price-based GHG-related measures, can be applied to goods at three different levels. The most straightforward case is to apply the measure to the good itself, say a tax applied to light bulbs, refrigerators or cars, according to their energy efficiency levels. A significant difficulty here is that not all existing policies relating to climate change focus on products *per se*. Many GHG-related policies target items broader than individual products—such as installations, firms, industry, sectors, or nations—and attempt to make distinctions relevant to trade on this basis rather than in terms of specific products.

The next most straightforward case is a price-based measure that is applied to an intermediate input used in the production of the good. Under its Superfund programme, for example, the United States taxed certain domestically produced chemicals that were used in the production process of other chemicals. It is clear that in some sense the derived chemicals are also taxed, and therefore a border tax adjustment on imported derived chemicals might be warranted. As further discussed below, some authors have argued that GHGs emitted during the production of goods could be viewed as a necessary part of the production of the taxed product. The problem is that the carbon emissions are not literally an "input" into the production but rather an output.

Less straightforward applications concern taxes on the production processes used in making the good or carbon emissions that occur during production of the good. A government may wish, for example, to discourage the use of a particularly polluting production process. It may therefore tax the good when it is produced with

[4] According to WTO (2008), the Panel and the Appellate Body determined criteria to distinguish a border measure, in the form of a tariff governed by GATT Article II, and an internal tax enforced upon imports at the border governed by Article III on national treatment. The Panel emphasized that if the obligation to pay a charge accrues due to an internal event, such as the distribution, sale, use or transportation of the imported product then it is an internal charge governed by Article III. If the charge is imposed "on importation" and independently of its distribution in the domestic market, then it is a border measure subject to the requirements of Article II. This was reinforced by the AB in Appellate Body Report (WTO 2009, para. 163).

one process but not when it is produced with another. GHG and other environmental taxes used in many countries result in competitive gains for renewable energy projects compared with fossil fuel projects. Countries such as Denmark, Finland, the Netherlands, Norway, Sweden, Switzerland and the UK have implemented taxes to reflect environmental costs based on the GHG content of energy sources. In such cases, the domestic industry may consider that such taxes put them at a disadvantage in relation to foreign producers who do not face similar production process taxes. A government may therefore be lobbied to impose a border tax adjustment on imported goods.

Two distinct sets of problems repeatedly arise when considering the WTO compatibility of border taxes or regulations on imported products. First, there is the definition of similar products (the specific WTO term for "similar products" is "like products"). Only if the imported and domestic products are like, do the WTO rules on non-discrimination apply. Second, there is the definition of "no less favourable" treatment, which considers the situation where a domestic measure treats imported like products less favourably. The issue of less favourable treatment (or the comparability of GHG measures and their effects on production costs) is especially complex when dealing with domestic regulations aimed at mitigating climate change.

Suppose a government taxes energy-inefficient refrigerators as part of its climate policy. Under WTO rules, the government is allowed to impose the same tax at the border on imported energy-inefficient refrigerators because the tax relates to a physical characteristic of the product, i.e. energy-non-efficient refrigerators. What is prohibited by Article III of GATT is the imposition of a border tax that has the effect of discriminating against similar imported refrigerators. This could arise for example, if the importing nation considered that *imported* energy-efficient refrigerators were not like *domestic* energy-efficient refrigerators. Alternatively, a national tax scheme might always classify imported refrigerators under a higher tax category. Plainly the issue is whether imported and domestic refrigerators are "like" products—and thus must be charged the same tax—or are not "like" products, thus can be taxed differently. The definition of "likeness" is therefore significant and likely to be controversial in the climate change context when applied to questions such as whether a tonne of steel made with clean energy is "like" a tonne of steel made with unclean energy.

Likeness

In GATT/WTO likeness is informed by overarching WTO goal of trade liberalization and competition. The determination of likeness between two products (imported and domestic) depends on whether they "compete" in the market (WTO 2001, para. 98; 2014, para. 5.16). In the context of climate change, the debate is based on one fundamental issue: whether two products can be differentiated and considered unlike based on criteria relating to GHG emissions—even if they somehow compete for the same consumers in the same market. For instance,

would it be permissible to differentiate (and therefore treat differently) products based on: (i) the level of GHGs emitted in production; (ii) the level of GHGs emitted within the sector producing such a product; (iii) the level of GHGs emitted nationally by the exporting country; or (iv) the GHG-related policies or actions of an exporting or importing country?

The Appellate Body (AB) ruled in *Japan-Alcohol* that likeness is established by comparing products on the basis of (i) product characteristics, (ii) end uses, (iii) consumer preferences and (iv) tariff classification. The aspect of consumer preferences involves a comparison between products based on the competitive relationship between them in the marketplace. Any determination of likeness will be made on a case-by-case basis and will require an overall assessment based on these criteria as well as relevant facts.

The scope of the concept of likeness must be determined by the particular provision in which the term 'like' is encountered as well as by the context and the circumstances.[5] In *EC-Asbestos* the AB clarified that the determination of likeness is essentially a determination of the competitive relationship between imported and domestic products. If they compete they are presumed to be like, if they do not, then they must be unlike. Products may be treated differently if they are not like. They may also be treated differently if they are like, as long as the resulting treatment of the imported product is no less favorable in terms of its opportunity to compete in a market. The AB recently confirmed this approach in *EC-Seal Products*. It has further noted that the national treatment obligation requires a comparison of treatment accorded to the group of products imported from the complaining Member on the one hand, and the treatment accorded to the group of like domestic products on the other hand. It clarified that a panel must objectively assess the group of domestic products that are "like" the group of products imported from the complaining Member, and that "once the universe of imported and domestic like products has been identified, the treatment accorded to all like products imported from the complaining Member must be compared to that accorded to all like domestic products." (WTO 2012c, para. 194).

A key element to consider in the context of climate regulations is the distinction between product characteristics and the manner in which they are produced (process and production methods, or PPMs). As will be discussed below, PPMs may be product-related or non-product-related (Charnovitz 2000, 2002; Gaines 2002;

[5] The 'likeness' of Article III: 4 and Article I GATT is considered to be broader than Article III: 2, since the latter also refers to *directly competitive or substitutable products (DCS)*. Likeness in Article III: 2 refers to perfectly substitutable products, while DCS products are imperfectly substitutable, but they are in a competitive relationship. In the analysis of DCS, emphasis is placed on the market place, or in other words, the consumer preferences characteristic. However, DCS and the competitive relationship between products are not to be analysed exclusively by reference to current consumer preferences. According to the AB in *Japan-Alcoholic Beverages*, the word substitutable indicates that the requisite relationship may exist between products that are not, at a given moment, considered by consumers to be substitutes, but which are, nonetheless, capable of being substituted for one another. Likeness in Article I and III: 4 is broader than likeness under Article III: 2, but not broader than DCS.

Wiers 2001). A PPM is a process or production method, which refers to the way in which a product is made. It covers any activity that is undertaken in production, such as activities related to the production of a good or activities in bringing a good to the market and the extraction of natural resources for incorporation into goods. A key question in this regard is whether different process and production methods (i.e. environmentally sound methods vs. environmentally harmful methods), may render products unlike and therefore capable of distinct treatment. This will be discussed in further detail in Sect. 2.2.1, as the AB has recently pronounced on PPMs for the first time in the context of the TBT Agreement.

GHGs emitted in the production process—whether directly by the producer or indirectly by a producer of an input (such as electricity generation)—would not *per se* be considered a determining factor of likeness where an imported and domestic product compete in the relevant market. Therefore, any measure applied to an imported product on the basis of differences in non-product-related PPMs (i.e. most GHG related PPMs) would call for a determination whether such differences affect the competitive relationship between concerned products. If products produced with environmentally sound PPMs and those produced with environmentally harmful PPMs continue to compete, they would be considered like products and could not be treated with distinction in violation of Article III of GATT.

Some have nevertheless argued in the context of price-based GHG measures that the level of GHG emissions attributable to a product should be considered "part of" the imported product. The suggestion is that emissions are covered by the language of Article II.2 (a) which authorises "charges on imports equivalent to internal taxes imposed *in respect of an article from which the imported product has been manufactured or produced in whole or in part*." Others have also suggested that the broad language of Article III.2, which states that imports "shall not be subject, directly or indirectly, to internal taxes or other internal charges of any kind in excess of those applied, directly or indirectly, to like domestic products", also supports the idea that internal climate change measures based on criteria connected to non-product-related PPMs (level of GHGs emitted) could be imposed at the border against imported like products consistently with the national treatment provisions on like products (Pauwelyn 2007; WTO and UNEP 2009). Some others have argued that the French version of Article II:2(a) on border tax adjustments provides that only taxes on items "incorporated" in the imported product can be collected at the border. This would appear to exclude any tax on GHGs from a border adjustment.[6]

[6] Note that the GATT US-Superfund case seems to provide support for treating a tax on energy as eligible for border adjustment. The Panel in that case allowed the United States to impose a tax, domestically applied to certain chemicals, on imports that had used the same chemicals in the production of the imported goods. However, the panel did not specify whether these chemicals had to be physically present in the imported product (GATT 1987). A tax on energy, however, is not necessarily the same as a tax on GHGs. Even if a precedent may exist for taxing inputs that are not physically incorporated, GHG emissions are not an input but an output. Moreover, an interpretation of the Superfund panel report that would allow a tax on GHGs to be adjusted at the border would seem to clash with the conclusions of the 1970 Working Party on Border Tax Adjustments.

It is important to note that the provisions of Articles II and III: 2 of GATT mentioned in this context only refer to taxes and charges, i.e. to price-based measures and not to regulations. As climate change mitigation policies often rely on non-price regulations (standards) or on emission permits, such as under the EU's Emissions Trading Scheme (ETS), the practical scope of this suggested interpretation of like products in the context of GHG price-based measures for non-price based measures is unclear.

WTO rules on border adjustments for exports maintain a parallel distinction between direct taxes (on firms) and indirect taxes (on products) and only allow the latter to be rebated at the border on exports. This is in line with the traditional focus of the GATT prohibition on discrimination between products and the fact that non-product related criteria will not *per se* render unlike products that are competing and which are otherwise like. Since climate change taxes tend to target firms, sectors or nations rather than particular products *per se*, such climate change measures could fall foul of WTO disciplines assuming traditional approaches are followed.

The WTO rules maintain a similar distinction between product and non-product based export tax rebates. Article III of GATT and the Agreement on Subsidies and Countervailing Duties (ASCM) allow for export rebates on taxes paid domestically, but only for indirect taxes (on products), not for direct taxes (paid on firms or activities for example); such distinction is again very significant in the context of GHG measures. Indeed, to the extent that most GHG emission charges fall on producers, including at the plant level, such direct taxes could not be rebated upon export. The question is, therefore, whether WTO case law suggests that any use of border tax adjustments (rebate) on exports would be found to be inconsistent with Articles I, II and III of GATT.

Less Favourable Treatment

Once likeness between imported and domestic like products is demonstrated, Article III of GATT on national treatment includes a prohibition on regulations or taxes that treat imported like products less favorably through modifying the "the conditions of competition to the detriment of imported products". This is the benchmark used to assess the existence of "protectionism" condemned by Article III—i.e. whether the internal measure is applied "so as to afford protection to like

---

It is noteworthy, however, that the report of the Working Party on Border Tax Adjustments did not specify whether taxes based on non-product-related PPMs can be adjusted at the border. The pre-WTO case US Tuna-Dolphin II shared this view. It was mentioned in paragraph 5.8 that the Ad Note of Article III "could not apply to the enforcement, at the time or point of importation, of laws, regulations or requirements that related to policies or practices that could not affect the product as such, and that accorded less favorable treatment to like products not produced in conformity with the domestic policies of the importing country." (GATT 1994, para. 5.8)

domestic production".[7] While the national treatment obligation of Article III prohibits less favorable treatment of imported like products, it does not require identical treatment (except when dealing with like products narrowly defined under the first sentence of article III:2 for the purpose of price based measures) (WTO 2001, para. 100; 2005a, b, para. 96).

A formal difference in treatment is neither necessary nor sufficient to show a violation.[8] Whether or not imported products are treated less favorably should be assessed by examining whether a measure modifies the conditions of competition in the relevant market to the detriment of imported products. In other words, the examination of whether less favorable treatment exists must be based on a careful analysis of the contested measure and of its implications in the market place.

In the context of climate change mitigation measures, an argument can be made that while the national treatment obligation of Article III prohibits less favourable treatment of imported like products, it is legitimate to make regulatory distinctions within the treatment accorded to foreign products on the basis of a GHG-PPM so long as similar GHG-PPM imported and domestic products are treated similarly. Such treatment would not constitute 'less favourable treatment' and therefore would not necessarily constitute a violation of the national treatment obligation. This has been developed in the context of the TBT Agreement and will be discussed in Sect. 3 below. However, the AB has expressly rejected the importation of the 'legitimate regulatory distinction' into Articles I and III of GATT in the recent case *EC-Seal Products*. It therefore seems that this may not be a relevant consideration within the context of the GATT.[9]

In the context of (import) border adjustments that may be defended in terms of carbon leakage but which are motivated to a significant degree by competitiveness concerns, a different problem arises—that of establishing cost equivalence. This problem also arises in the context of GATT Article XX and Article 2.1 of TBT. A GHG-related dispute over differential carbon constraint costs that had led to the imposition of border adjustment measures may call for a comparison between different kinds of measures to determine whether less favourable treatment was accorded to foreign products. For example, if an importing country maintained a cap and trade system (also called emissions trading) and an exporting country constrained carbon through direct regulation, a comparison would be required

[7] "...in endeavouring to ensure 'equality of competitive conditions', the 'general principle' in Article III seeks to prevent Members from applying internal taxes and regulations in a manner which affects the competitive relationship, in the marketplace, between the domestic and imported products involved, 'so as to afford protection to domestic production.'" (WTO 2001, paras. 96, 98)

[8] When dealing with a domestic non-price based measure, the AB in *Korea—Various Measures on Beef* reversed the Panel, which had concluded that a regulatory distinction based exclusively on the origin of the product necessarily violated Article III. The Appellate Body emphasized the fact that "differential treatment" may be acceptable, so long as it is "no less favourable". Article III only prohibits discriminatory treatment which "modifies the conditions of competition in the relevant market to the detriment of imported products".

[9] See Sect. 2.3 below.

between a price-related and a non-price related regime. Climate change mitigation policies may involve price or non-price interventions—including taxes, GHG permits or allowances, prescriptive regulation,[10] economic (dis)incentives of one form or another, and subsidies.[11] While these different approaches can all be evaluated in terms of their consequences for emission levels (Baron et al. 2007), the cost imposed by regulatory or administrative policy measures (standards, voluntary agreements or unilaterally-set emission or efficiency targets) are far more difficult to assess.[12] However, economic analysis cannot fully project the costs of a regulation or a standard without making simplifying assumptions.

Quantitative Restrictions

Article XI of GATT prohibits all export and import quantitative restrictions. Article XI is relevant if a GHG non-price based measure is in the form of an import or export quota or prohibition. Article XI prohibits quantitative import and export restrictions enforced at the border. If, for example, a GHG programme or mechanism to control the level of GHGs emitted by imported products or foreign producers resulted in the maintenance of quantitative restrictions (on imports or on exports), Article XI could become relevant. The mechanism used to control GHG-related imports might not be the same as that imposed on domestic producers.

Whether or not Article XI is relevant in the context of a GHG measure will depend on whether or not the measure is properly characterised as a "quantitative restriction". However, it may not always be easy to determine whether a measure falls within Article XI, or is rather the kind of internal regulation that can be dealt with under Article III.

---

[10] Prescriptive policies are regulations, mandates and agreements that directly compel specific actions by, or communicate expectations to, industry companies and/or associations. They can be: technology-prescriptive as in the case of equipment standards; management-prescriptive as is in the cases of auditing, conservation planning and energy management standards; or performance oriented as in the cases of plant, firm or sector regulation and agreements concerning benchmark targets and absolute energy savings goals.

[11] An extensive literature—not reviewed here—has developed on the relative merits of alternative carbon constraint policies. Taxes, for example, provide cost certainty for businesses because the tax rate is known in advance. Emissions trading potentially offers lowest-cost solutions for the economy, but the price of allowances (or permits) is not known in advance and will be determined by trading in the market.

[12] Comparability of costs of different climate change mitigation policies can be analysed either from a top-down level, through general equilibrium models, or using bottom-up cost analyses. In theory, it is possible to render different policy-imposed costs comparable by attaching values to all relevant elements in production and output pricing that are attributable to the policy intervention in question (Baron et al. 2007). But economic tools that "convert" non-price-based policies to price-based equivalents raise both analytical and practical challenges. We know from trade theory on the non-equivalence of tariffs and quotas, for example, that even if price equivalents are calculated, different kinds of intervention carry different resource allocation consequences which can affect the conditions of competition in the market.

However, there is no easy rule and each situation must be determined on its own facts. Recall that under the GATT Tuna case, the Panel considered that the PPM related domestic regulation on the method of fishing tuna could not be covered by the discipline of Article III of GATT because Article I and III are concerned with the regulations related to "products" only, and it was thus automatically considered a border import restriction in violation of Article XI. However, in the more recent *WTO US-Tuna II*, the AB did not raise any issue on whether the method of fishing tuna, a PPM, would contradict any findings of likeness between two tuna products based on their method of fishing tuna in a dolphin friendly or unfriendly manner, and therefore the AB did not go into the relevance of Article XI of GATT for PPMs. At this stage therefore it is unclear in the jurisprudence whether PPMs may be covered by Article XI of GATT.

Note finally that a non-discrimination obligation exists for quotas and tariff-quotas that are imposed consistently with Article XI of GATT. This is provided for in Article XIII. There are only very few situations where an Article XI restriction could be WTO consistent, including situations of safeguards, situations covered by Article XI: 2 specially relevant for export quotas or justified under Article XX of GATT.

As discussed above, many of the climate change related national programs will impose measures on foreign products and foreign producers which could lead to challenges under basic GATT market access provisions. This arises in a number of legal contexts and in no small part is due to the fact that the basic GATT rules were not drafted with climate change considerations in mind. However, if a GHG-related measure were to fall foul of the provisions discussed above, the challenged Member would be entitled to invoke the exceptions of Article XX for justification.

GATT Article XX Justifications

Article XX of GATT allows Members to take measures otherwise inconsistent with the GATT obligations on public policy grounds. Article XX(a) to (j) constitutes an exhaustive list of public policy exceptions to the mainstream GATT rules. These exceptions include the protection of human, animal or plant life or health, and the conservation of exhaustible natural resources.

A measure that is aimed at protecting the environment may have the consequence of restricting trade. However, Members are authorised to pursue certain policy objectives, including environmental ones. Article XX of GATT provides for two main grounds to justify an environment-related measure: where the measure is necessary to protect human, animal or plant life or health (Article XX(b)); or where it relates to the conservation of exhaustible natural resources (Article XX(g)). Although climate change related policy is not expressly referred to in Article XX, such policies can be viewed as a policy both for the protection of life and health of people, plants and animals, and as a policy for the conservation of the climate

system as an exhaustible resource (Holzer 2014). As such, a measure may be considered under both paragraphs (b) and (g) of Article XX simultaneously.[13]

The AB has articulated a two-tier test to determine whether an environmentally related trade restriction may be justified under Article XX. First, the disputed measure must fall under one of the two justifications in paragraph XX (b) or (g). Second, the measure should not constitute (i) arbitrary or unjustifiable means of discrimination between countries where the same conditions prevail, nor (ii) a disguised restriction on international trade. The second part of this test no longer deals with the objective of the measure, but with the way the measure is applied or implemented, and whether this has been done in a reasonable manner and in good faith. This applies to both substantive and procedural elements.

The AB has observed that "conditioning access to a Member's domestic market on whether exporting Members comply with, or adopt, a policy or policies unilaterally prescribed by the importing Member may, to some degree, be a common aspect of measures falling within the scope of one or another of the exceptions . . . of Article XX." (WTO 1998, para. 121).[14] Members have also recognized that certain environmental concerns may be of a trans- boundary or global nature. This was reflected in a report by the WTO's Committee on Trade & Environment (CTE).

> The CTE notes that "...governments have endorsed, in the results of the 1992 U.N. Conference on Environment and Development, their commitment to Principle 12 of the Rio Declaration, which states that "[u]nilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing transboundary or global problems should, as far as possible, be based on an international consensus." There is a clear complementarity between this approach and the work of the WTO in seeking cooperative multilateral solutions to trade concerns. The CTE endorses and supports multilateral solutions based on international cooperation and consensus as the best and most effective way for governments to tackle environmental problems of a transboundary or global nature. (para. 171)".

The AB referred to this report, as well as the international community's attitude towards the importance of the environment as reflected in the reference to "sustainable development" in the preamble of the WTO Agreement and Principle 12 of the Rio Declaration on Environment and Development, in support of its decision in *US-Shrimp*.

Finally, as regards the possibility that a measure may be a disguised restriction on trade, such protectionist intent can be discerned from its design, architecture and revealing structure. This could involve analyzing the overall strategy adopted to

[13] Note that one WTO Member could arguably invoke the paragraph (a) measures necessary to protect public morals, as the survival of humans via GHG actions might be argued to be an action of public morals.

[14] The AB reaffirmed in this case (contrary to the conclusions reached in the two US-Tuna reports decided by GATT panels) the right of Members to take even unilateral trade-restrictive environmental measures so long as a balance of rights and obligations is maintained "between the right of a Member to invoke one or more of the exceptions of Article XX..., on the one hand, and the substantive rights of other Members under the GATT 1994, on the other hand"—as provided by the chapeau of Article XX.

reach the objective and could involve looking at the transparency and predictability of the process. The measure as a whole will be analyzed, not merely its discriminatory element.

Measure Necessary for the Protection of Health

The evolution of WTO legal rulings helps in the interpretation of criteria determining the WTO-legitimacy of public policy action justified under the exceptions of Article XX. Early on, the AB developed a three-pronged Article XX necessity test involving a "weighing and balancing" of the values at issue for analysis under the first step mentioned above (WTO 2000b, paras. 161–164, 175–176). The criteria related to the: (i) importance of the value protected; (ii) (effective) contribution of the measure to attaining the stated public policy objective; and (iii) trade restrictiveness, including in terms of the existence of less trade-restrictive and reasonably available alternative measures that guarantee the desired level of attainment of the public policy objective (WTO 2000b, para. 162).

The AB has stated in *Korea-Beef*, when discussing the necessity test for the first time (in the context of an article XX(d) invocation), that "[t]he more vital or important those common interests or values are, the easier it would be to accept as 'necessary' a measure designed as enforcement instrument." (WTO 2000b, para. 162) In *EC-Asbestos*, the AB clarified that health is "both vital and important in the highest degree." (WTO 2001, para. 172) Similarly, in *Brazil-Tyres*, the AB mentioned, "few interests are more "vital" and "important" than protecting human beings from health risks" and that "protecting the environment is no less important." (WTO 2007, para. 144) In addition to being important, the measure has to make a meaningful contribution to the protection of human, animal, plant life or health. A contribution exists when there is a genuine relationship of ends and means between the objective and the measure.

The AB's approach in *Brazil-Tyres* suggested a minimum threshold that must be met in order for a measure to be deemed necessary: that the measure must bring about a material contribution to the achievement of its objective. However, the AB has recently clarified in *EC-Seal Products*, that the approach in *Brazil-Tyres* was not to suggest a generally applicable threshold, rather, the case was more limited to cases where the measure produces such severe effects on international trade as those resulting from an import ban, and it would be difficult to find the measure necessary unless it satisfied that the measure is apt to make a material contribution to the achievement of its objective (WTO 2014). It therefore seems that the more restrictive a measure is on international trade, the more of a contribution it must make to the objective in order to be deemed "necessary." The AB in *Brazil-Tyres* insisted that such an assessment on contribution was to be qualitative and quantitative and noted in particular that the contribution does not have to be immediately observable, particularly with regards to measures adopted to address climate change, since the effect of such measures can only be evaluated over time (WTO 2007). In such cases related to climate change, the AB added that "it may prove

difficult to isolate the contribution to public health or environmental objectives of one specific measure from those attributable to the other measures that are part of the same comprehensive policy" (WTO 2007, para. 151). It is therefore unclear how the element of material contribution may be assessed for measures addressing climate change since the effects may not be immediately evident and a single measure may part of a more comprehensive policy. The issue of "alternatives" has thus become particularly pertinent to WTO Members when invoking environmental or health policies to justify a trade restriction otherwise inconsistent with GATT.

It is for the complainants to prove that there is a WTO-consistent or less trade-restrictive alternative reasonably available for achieving the desired aim of the respondent.[15] Whether alternatives are reasonably available depends on similar factors such as (i) the extent to which the alternative measure contributes to the realization of the end pursued; (ii) the difficulty of implementation; and (iii) the trade impact of the alternative measure compared to the measure at issue in the dispute. In addition to being 'reasonably available', the alternative measure must also achieve the level of protection sought. A Member does not have to explore and exhaust any possible alternative measure—it only has to address those potential alternatives that are raised by the complainant. Further, a measure justified on environmental or public health grounds cannot be rejected by pointing to a less trade restrictive alternative unless that alternative is technically and financially within reach for the specific Member concerned, and unless it provides at least the same level of protection as that desired by the Member adopting the measure (WTO 2005a, b, 2007). Given these conditions, it therefore seems unlikely that a climate change measure would be defeated solely on the basis of reasonably available alternative measures.

Measure Related to the Conservation of Natural Resources

As argued, in order to rely on the flexibilities of Article XX(b) and (g), a measure must be proven to be either necessary to protect human, animal or plant life or health (paragraph (b)), or it must relate to the conservation of exhaustible natural resources and be made effective in conjunction with restrictions on domestic production or consumption (paragraph (g)). Article XX(g) is particularly relevant in the climate change context since changes in the climate lead to the depletion of

[15] The AB held in *EC-Asbestos* that whether there are reasonably available alternative measures is part of the "weighing and balancing process" to determine whether a trade restrictive measure is necessary, as referred to in (WTO 2000b). This is an area where the jurisprudence has taken a 180° turn. In the GATT days, it was understood that the country invoking the exception would have to prove the absence of alternatives. Under the WTO, the Appellate Body changed this and concluded that "while the responding Member must show that a measure is necessary, it does not have to show, in the first instance, that there are *no* reasonably available alternatives to achieve its objectives" (WTO 2005a, b, para. 309), see also (GATT 1991, 1994).

other exhaustible natural resources, biodiversity, forestry, fisheries etc. These problems are likely to be exacerbated in the future. Article XX(g) may therefore be used more frequently to address problems associated with climate change as they impact exhaustible natural resources in the future.

Article XX(g) raises additional considerations in the context of climate change. Firstly, for such measures to succeed under paragraph (g), they must relate to the "conservation of natural resources". In *US-Shrimp*, the AB interpreted the term 'exhaustible natural resources' as including both living and non-living natural resources (WTO 1998, paras. 128–131). In *US-Gasoline*, the Panel ruled that clean air is an exhaustible resource because it has human value and is thus a resource, it is natural, and even though it is renewable, it can be depleted and is thus exhaustible (WTO 1996b). It has been argued that preserving the global climate is analogous to the preservation of clean air in *US-Gasoline* (Condon 2009). In the alternative, it has been suggested that the issue of GHG emissions in the atmosphere could be viewed as a clean air issue altogether (Condon 2009), thus squarely within the scope of Article XX(g). Once a measure is determined to concern the conservation of a natural resource, the next step is to consider whether the measure "relates to" the objective pursued. In order to demonstrate this requirement for Article XX(g), there must be a "close and genuine relationship of ends and means" and an examination of "the relationship between the general structure and design of the measure. . . and the policy goal it purports to serve." (WTO 1998, para. 136) In its interpretation of the paragraphs of GATT Article XX in *US-Gasoline*, the Appellate Body examined whether "the means (the challenged regulations) are, in principle, reasonably related to the ends" and whether "such measures are made effective in conjunction with restrictions on domestic production or consumption" (". . . a requirement of even-handedness in the imposition of restrictions").[16] An additional question arises regarding the jurisdictional nexus between the Member enacting the measure and the natural resource in question. It may be argued that there is a sufficient nexus between Members and the global climate, and thus the exhaustible natural resources affected by it.

Analysis of the Chapeau of GATT Article XX

In regard to the second step of Article XX of GATT noted above, a Member's right to rely upon one of the policy objectives covered by the exceptions is limited

[16] However, in setting out this test it also insisted on the distinct wording of the paragraph XX (b) and paragraph XX(g) exceptions, saying that their coverage and scope of application were very different. Paragraph XX(g)—measures relating to the conservation of natural resources—was considered broader in reach, while the XX(b) exception—measures necessary for the protection of health—required a more stringent "necessity" test. However, the Brazil-Retreaded Tyres jurisprudence, further discussed below, seems to have brought these two tests closer so that, to a large extent, the relationship required by the two paragraphs is similar, bringing closer the operation of the environment and health policy exceptions.

by the requirement that it must comply with the introductory clause (or chapeau) of those provisions. The purpose of the introductory clause is to prevent the "abuse or illegitimate use of the exceptions to substantive rules available in Article XX."

An important part of the non-discrimination requirement is that Members must take into account the different conditions that may occur in the territories of other Members. This obligation is twofold, since discrimination occurs (i) when countries in which the same conditions prevail are treated differently and (ii) "when the application of the measure does not allow for an inquiry into the appropriateness of the regulatory program for the conditions prevailing in those exporting countries." The prohibition against "arbitrary or unjustifiable discrimination between Members where the same conditions prevail" in the chapeau seems to recognize that different conditions in different Members call for different treatment (WTO 1998, para. 164). The same regulation might not be appropriate for countries where the same conditions do not prevail.[17] In a similar vein, the *EC-Tariff Preferences* finding interpreted language in the Enabling Clause to allow discriminatory preferential treatment conditional upon compliance with development criteria so long as countries in similar conditions were treated similarly (WTO 2004).

This is particularly important in the climate change context, since different conditions and capabilities have been expressly recognised through the principle of "common but differentiated responsibilities and respective capabilities" in the preamble and Article 3 of the UNFCCC. Moreover, this principle as enshrined in the UNFCCC calls for developed countries to take the lead in combating climate change, and may prevent the application of GHG measures against developing countries to a certain extent.

Among such different "conditions", one might argue that a measure in respect of which Article XX of GATT is invoked should provide for development considerations in the broad context of its framework and operational features. This would be consistent with the spirit of non-reciprocity and special and differential treatment provisions of the WTO. It would also be in line with the language in the preamble to the Marrakesh Agreement on sustainable development, where Parties to the Agreement seek "both to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development." Such an interpretation of the chapeau of Article XX could imply a form of principle parallel to that of common but differentiated responsibility and respective capabilities enunciated in the UNFCCC and the 1992 Rio Declaration and arguably would be supported by the sustainable development objective articulated in the preamble of the WTO Agreement.

[17] It may be argued that this is the case for developing versus developed countries. It may oblige a country to consider whether developing countries should carry the same burden. More flexibility might be needed by developing countries, which would be in line with the '*common but differentiated responsibilities and respective capabilities*' principle under UNFCCC. Thus, any measure must not be rigid or inflexible and should involve a comparison with other countries (WTO 1998, para. 177).

In order to prevent arbitrary or unjustifiable discrimination the measure needs to be sufficiently flexible and consider measures that other Members have enacted that are comparable in effectiveness to address the same policy objectives. A country may be obliged to impose lower requirements or none on countries that have their own legislation (comparable in effectiveness). Moreover, some have suggested that the same regulation may not be appropriate for countries where the same conditions do not prevail, for example as between developing and developed countries, as noted above. A country may be obliged to consider whether developing countries should carry the same burden as developed ones—particularly in the climate change context, given the principle of common but differentiated responsibilities and respective capabilities. Particular difficulty further arises in this context due to discrepancy between sectorial actions within and between Members.

The non-discrimination element of Article XX also contains the obligation of good faith; a country should engage in serious efforts to negotiate and conclude an agreement to address concerns before resorting to trade restrictive measures and an Article XX justification. The WTO recognizes the need for concerted and cooperative efforts and the ruling in *US-Shrimp* indicated that efforts should be made to secure the legitimate policy goal through negotiations and consensus instead of unilateral and non-consensual procedures. Such negotiations should be conducted with all Members and all need to be given similar opportunities to negotiate. However, there is no obligation to reach an agreement before being able to invoke GATT Article XX. This has been an important development, since it carries the recognition that, in principle, Members may act unilaterally to protect the environment.

No clear test exists for the application of the provisions of the chapeau of Article XX. However, a review of the cases in which Article XX has been addressed, as well as the points made above, suggests a number of factors that may be relevant in assessing whether the application of a measure by a Member complies with the chapeau requirements (depending on the circumstances of any particular case). These include: (i) if there is discrimination, whether that discrimination was foreseen by the Member, or whether it was merely inadvertent or unavoidable; (ii) whether "serious, good faith efforts" have been made by the Member to lessen any discriminatory effects; (iii) whether similar or comparable opportunities have been provided by the Member, or consideration given, to all exporting Members to negotiate; (iv) whether the application of a measure is flexible enough to take into account the specific conditions prevailing in the exporting Member's economy; and (v) whether the application of the measure complies with other WTO standards, such as in relation to due process and transparency (WTO 1998, 2004).

In WTO dispute settlement, it has most often been a failure to demonstrate compliance with the introductory chapeau of Article XX of GATT that has led to findings that certain measures are not justified by those provisions. But, as in the *US-Shrimp* case, following such a finding, Members may make changes to their original measure in order to bring it into full compliance with Article XX of GATT.

The language of the chapeau of Article XX also implies that while the importing Member invoking Article XX cannot insist on a particular policy approach towards a public policy objective, it can nevertheless require that exporting Members maintain specific environment policies and measures that are comparable in effectiveness in dealing with the policy concern it is invoking (WTO 2004).[18] Article XX would therefore require a comparison of the effectiveness of alternative policy approaches adopted by Members. As with the assessment of the comparative costs of alternative climate change policies discussed above, measuring comparable effectiveness in terms of environmental objectives is undoubtedly challenging. In the case of climate change policy, the focus of the comparison would be the health or environmental effectiveness of the policies subject to comparison.

Utility of GATT Article XX to Address Climate Change Concerns

It may be concluded from the above that the scope of Article XX could be interpreted to provide policy space for GHG-related measures, even if *a priori* WTO-inconsistent, could nonetheless be justified.

However, Article XX and the policy space provided within the WTO to pursue climate change concerns may not be adequately suited to address some of the more general problems associated with climate change. In particular, some Members point out that they have highly productive industries and agriculture and thus may be higher GHG emitters, although they are not the ultimate consumers of the goods produced within their borders; such goods are mainly exported for consumption in industrialized states. Yet, these Members may end up being victimized by border adjustments to offset their higher emissions, particularly due to pressure from industries in industrialized countries that have higher environmental (and thus financial) costs. This is symptomatic of a more general problem: less environmentally friendly industries are shifted to developing countries with lower regulation and lower costs, while the goods produced are destined to be consumed in those same industrialized countries complaining of competitiveness concerns. A vicious cycle is thus created, and some may be unduly burdened by the shift of hazardous industries into their jurisdiction to produce goods destined to be shifted back to the industrialized country, while the recipient of the industry may be punished with

[18] It may oblige a country to impose lower or no requirements on countries that have their own (comparable in effectiveness) climate legislation. In the first *US-Shrimp* case (WTO 1998), the Appellate Body found that the United States required other WTO Members to "adopt a regulatory program (with respect to shrimp harvesting) that [was] not merely comparable, but rather essentially the same, as that applied to the United States shrimp trawl vessels." This was considered to be too "rigid and unbending"; because it did not take into account whether exporting countries might be using other measures to protect sea turtles. In the second *US-Shrimp* dispute, the US measure was considered to be consistent with Article XX because the US introduced flexibilities in its import regulation that allowed imports from countries that demonstrated policies of comparable effectiveness in dealing with the protection of turtles.

border adjustments as a result of the higher emissions from these hazardous industries. International cooperation is the key to addressing this general problem given the limitation of unilateral action through the WTO in this context.

2.2 Technical Barriers to Trade

Several technical regulations exist on GHG mitigation action. Regulations on equipment efficiency, which commonly take the form of minimum efficiency performance standards (MEPS), are generally applied on products in the residential, commercial and automotive sectors. Regulations can also be used to influence full process efficiency and/or process configurations in industrial sectors. For example, cement plants may be required to attain certain overall benchmark efficiency levels, or iron and steel plants may be required to use coke dry quenching processes. More typically, governments define energy efficiency goals for specific processes, factory or industry sector, based on best domestic or international practice—enumerated as benchmark targets—through negotiated agreements or non-binding targets. Most of these regulations are technical barriers to trade subject to the disciplines of the TBT Agreement. The TBT Agreement regulates the application of technical regulation which cannot be discriminatory vis-à-vis all like imports and like domestic products. Climate change regulation enforced at the border in order to address carbon leakage and competitiveness issues can therefore also be covered by the TBT Agreement. One of the legal challenges in the area of trade and climate change is that many measures addressing climate change concerns will be subject to multiple WTO provisions; in the context of non-discrimination, a single measure will often be covered by both GATT and TBT disciplines. The legal difficulty is to ensure that the mutual application of the GATT and TBT is harmonious and effective. Under the WTO, as a general rule, the rights and obligations under these agreements are cumulative and simultaneously applicable. The AB has emphasized that:

> We agree with the statement of the Panel that: It is now well established that the WTO Agreement is a 'Single Undertaking' and therefore all WTO obligations are generally cumulative and Members must comply with all of them simultaneously ... (WTO 1999, para. 74)
>
> In light of the interpretive principle of effectiveness, it is the duty of any treaty interpreter to 'read all applicable provisions of a treaty in a way that gives meaning to all of them, harmoniously' (WTO 2000a, para. 81).[19] An important corollary of this principle is that a treaty should be interpreted as a whole, and, in particular, its sections and parts should be read as a whole (WTO 1999, para. 81).

This was a simple application of the principle of effective interpretation in the context of the WTO Single Undertaking.

[19] See also Appellate Body Reports including *United States—Gasoline* (WTO 1996b, p. 23), *Japan—Alcoholic Beverages II* (WTO 1996a, p. 12) and *India—Patents* (WTO 1997, para. 45).

Climate change regulation enforced at the border in order to address carbon leakage and competitiveness issues is also covered by the TBT Agreement. The AB has confirmed the policy space available in the TBT to pursue such climate change related policies through its interpretation of TBT Article 2.1 and 2.2 along the lines of the existing GATT balance between Member's market access obligations and their right to give priority to non-trade concerns. Technical regulations refer to mandatory regulations applied to an identifiable product that lays down one or more characteristics of the product or their PPMs. Product characteristics include features and qualities intrinsic to the product as well as those that are related to it, such as means of identification, presentation and appearance of a product (WTO 2001). The TBT Agreement lacks an explicit provision relating it to GATT, although its general relationship may be similar to that of the Agreement on Sanitary and Phytosanitary Measures (SPS Agreement). The TBT provisions often add to those of Article III:

> We observe that, although the TBT Agreement is intended to 'further the objectives of GATT 1994', it does so through a specialized legal regime that applies solely to a limited class of measures. For these measures, the TBT Agreement imposes obligations on Members that seem to be different from, and additional to, the obligations imposed on Members under the GATT 1994. (WTO 2001, para. 80)

Any reading of the TBT Agreement and GATT must not be such as to discourage compliance or reduce incentives to comply with the TBT Agreement. Unlike the SPS Agreement, compliance with the TBT Agreement does not give rise to a presumption of compliance with GATT. Compliance with an international standard (Article 2.5 TBT), however, gives rise to a presumption of necessity of the measure under Article 2.2 of the TBT. But in WTO *US-Tuna II*, the AB clarified that only international standards that come from an institution whose membership is open to all WTO Members are considered relevant standard under Article 2.4 of TBT. In the *US-Tuna II* dispute, the AB decided that the regional body in question could not produce a relevant standard within Article 2.4 of TBT because such regional body was not "open to all WTO Members" because new members had to be invited and this was not a mere formality. Accordingly, standards developed by the UNFCCC could only be a relevant standard within the meaning of Article 2.4 of TBT if it was considered that the UNFCCC is open to all WTO Members.

Since the policy objectives covered by Article 2.2 of TBT are not limited as those mentioned in Article XX of GATT, it is conceivable that a measure based on a policy covered by Article 2.2 TBT could not be covered by any provisional justification under any of the sub-paragraphs of Article XX of GATT; for example is consumer information a policy covered by any of the subparagraphs of GATT Article XX. In that context, in WTO *US-Tuna II* which stated, the AB reversed the panel finding that a measure inconsistent with Article 2.1 of TBT did not need to be assessed under Article III of GATT.

The AB has recently indicated that the overall logic and general position behind the balance between GATT market access rules and Article XX objectives can cross fertilize into provisions of the WTO beyond the GATT. In the recent TBT cases, the

absence of specific provisions granting exceptions to the primary obligations of the TBT Agreement have not constituted a bar to considering legitimate justifications traditionally recognized in Article XX of GATT. Support for this cross-fertilization of Article XX of GATT style considerations was found in the context provided by Article 2.2 and the fifth and sixth recitals of the TBT Agreement which recognizes that

> no country should be prevented from taking measures [. . .] for the protection of human, animal or plant life or health, of the environment [. . .] subject to the requirement that they are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail or a disguised restriction on international trade. (TBT Agreement 1995, para. 6)[20]

In these cases, the AB referred to the case law made in connection with Articles III and XX of GATT and introduced the notion of "legitimate regulatory distinction" in the interpretation and application of the "less favourable treatment" aspect of the national treatment obligation in Article 2 of the TBT Agreement. Moreover, in the interpretation of Article 2.2 of the TBT Agreement, prohibiting technical regulations more restrictive than necessary to fulfil a legitimate objective, the AB referred to the preamble of the TBT Agreement and adapted to its context the GATT Article XX necessity test jurisprudence. The AB has thus confirmed the policy space available in the TBT Agreement for the pursuit of non-trade concerns, and may be argued to include measures aimed at addressing climate change.

The first step under any TBT claim is to determine whether the measure at issue is a "technical regulation" as defined in TBT Annex 1.1: "Document which lays down product characteristics or their related processes and production methods." There is controversy whether technical regulations based on non-product related PPMs fall within the scope of the TBT Agreement, and even as to what PPM measures are product-related are not. Given the policy space available under the TBT to address climate change concerns, and the potential use of PPMs to address environmental concerns, it is important to consider what measures constitute technical regulations within the scope of the TBT Agreement.

2.2.1 Technical Regulation to Trade and PPMs

For environmentalists, PPMs serve to distinguish between goods produced in an environmentally sound manner, and those that are produced in a manner that harm the environment, although both sets of products may look alike (Gaines 2002; Charnovitz 2002). From a climate change perspective, PPMs are said to represent a valuable tool of environmental policy, a chance to give teeth to environmental norms and obligations where goods following environmentally sound PPMs are not like other goods that do not comply with said PPM requirements (Gaines 2002; Charnovitz 2002). From a trade perspective, PPMs may represent a risk of

[20] See the example: Appellate Body Report (WTO 2012b, para. 373).

protectionist distinctions based on non-transparent policies and criteria, threatening the market access guarantees under the WTO Covered Agreements (Read 2011). The debate and controversies surrounding PPMs are beyond the scope of this article.[21] Nonetheless, PPMs are very relevant in the climate change context and are expressly referred to in Annex 1.1 of the TBT Agreement. A PPM can come in different forms. The purpose of including PPMs in the context of climate change policies is to incorporate the (social/environmental) cost of production in the price of products so as to give an incentive to both producers and consumers to limit the use of carbon intensive or environmentally unfriendly products.

Traditionally, one central element of the debate surrounding PPMs is the so-called distinction between product-related PPMs and non-product-related PPMs as noted above.[22] There is no generally accepted legal definition of a product-related or non-product-related PPM. The conventional view seems to be that product-related PPMs are those that alter, leave a trace, effect or are detectable in the final product; and non-product PPMs do not (Charnovitz 2002; Conrad 2011; Gaines 2002). Under the GATT, there was significant debate on whether a measure aiming at a process or production method that made no physical impact on the product could be covered. GATT panels in *Tuna-Dolphin I* and *Tuna-Dolphin II*, two un-adopted GATT Panel Reports, found that such PPM regulations were not covered under Article III of GATT, and instead violated GATT Article XI, because Article III is concerned only with regulations on "products" (GATT 1991). However, the TBT Agreement covers "products, processes or production methods" in the definition of "technical regulation" under Annex 1.1. In the recent WTO *US-Tuna II*, the fact that the United States measure regulated a PPM on imported tuna (the method of fishing tuna) was not discussed by the AB, but the measure was found to be within the scope of the TBT Agreement.[23] This could, however, be due to the fact that the measure was a label, and labels are expressly included in the scope of the TBT in its Annex 1.1. This will be discussed in the next section.

[21] A central element in the PPM debate is the product-process distinction or 'product-process doctrine' as coined by Hudec in 1998, who observed that "under this so-called 'product-process doctrine', product distinctions based on characteristics of the production process, or of the producer, that are not determinants of product characteristics are simply viewed as a priori illegitimate" (Hudec 2003, pp. 619–649; Conrad 2011, pp. 25–31). The product-process distinction has been severely criticized (Howse and Regan 2000), and Hudec (2000) noted that the distinction posed a potentially lethal threat to process based regulation.

[22] The distinction between product related and non-product related PPMs emerged through the debate surrounding the product-process doctrine, referred to in Appellate Body Report (WTO 1999), and has since become a widely accepted analytical tool (Conrad 2011).

[23] The AB did not rule on the applicability of the GATT to that measure, however, since it found it to be in violation of the TBT Agreement, and Mexico did not request it to complete the legal analysis in the event it overturned the Panel's findings in relation to the GATT (which it did, finding that the Panel exercised a "false judicial economy" in according the same reasoning to Article 2.1 of the TBT Agreement and Article I and III of the GATT); see Appellate Body Report (WTO 2012d).

The AB has recently expressly pronounced on PPMs for the first time in *EC-Seal Products* and indicated that only product-related PPMs fall within the scope of the TBT Agreement.[24] The AB has clarified that only product-related PPMs are within the scope of the TBT Agreement, but it is still unclear what constitutes a product-related PPM. If the conventional view is maintained, that only those PPMs that affect, leave a trace or are detectable in the final product are product "related", then a significant number of PPMs may not be within the scope of the TBT Agreement. Given that the majority of potential PPMs to address climate change concerns may not qualify under this view, there are significant implications of this AB ruling. It is noted that most GHG related policies target industries or firms rather than specific products, which makes it harder to secure compliance through the flexible policy space of the TBT.

However, the non-application of the TBT Agreement to non-product-related PPM regulations (a term to be defined) would not make such regulations incompatible with WTO law. If the TBT Agreement does not cover or apply to non-product-related PPM regulations, these would be examined under Article III of GATT, and may find justification under Article XX. To remove non-product-related PPM regulations from the coverage of the TBT Agreement removes the application of the transparency provisions of the TBT at the detriment of developing countries and others whose exports face those technical regulations. One wonders about the impact of a situation where product-related PPM technical regulations are subject to the open list of policy objectives under the TBT, while the less transparent non-product-related PPM technical regulations—possibly justifiable under the closed list in Article XX of GATT—are not. The determination of what PPM measures are product-related depends on how one reads "characteristics" of the products and "their related process and production methods", an issue not yet fully assessed by the WTO case law.

[24] The AB noted that '[t]he definition of a technical regulation further provides that such a regulation may prescribe "product characteristics or their related [PPMs]". The use here of the disjunctive "or" indicates that "related [PPMs]" may play an additional or alternative role vis-à-vis 'product characteristics' under Annex 1.1'. It observed in this regard that '[a] plain reading of Annex 1.1 thus suggests that a "related" PPM is one that is "connected" or "has a relation" to the characteristics of a product. The word "their", which immediately precedes the words "related processes and production methods", refers back to "product characteristics". Thus, in the context of the first sentence of Annex 1.1, we understand the reference to "or their related processes and production methods" to indicate that the subject matter of a technical regulation may consist of a process or production method that is *related* to product characteristics. In order to determine whether a measure lays down related PPMs, a panel thus will have to examine whether the processes and production method prescribed by the measure has a sufficient nexus to the characteristics of a product in order to be considered related to those characteristics.' See Marceau (2014) and WTO (2014, para. 5.12).

2.2.2 The TBT Prohibition Against Non-Discrimination

The recent AB Reports in *US-Clove Cigarettes*, WTO *US-Tuna II* and *US-COOL* reiterate that technical regulations will, by their very nature, create distinctions between products according to their characteristics or PPMs.[25] In the GATT context, a less favourable treatment of imported products contrary to Articles I and III can be justified by a responding Member under the exceptions in Article XX. In the TBT Agreement, where there is no Article XX exception type provision, the AB has determined that the existence of "less favourable treatment" is not merely based on whether there is any detrimental impact of the measure on imports, but also on whether this impact stems from "legitimate regulatory distinctions". Accordingly, under the TBT Agreement, a detrimental impact arising from "legitimate regulatory distinctions" would not amount to "less favourable treatment" in the first place. This line of argument lends itself well to the type of measures used in the climate change context, those that draw a legitimate distinction between goods produced in an environmentally sound manner and those that are not.

In *US-Clove Cigarettes* the AB noted also that "the existence of a detrimental impact on competitive opportunities for the group of imported vis-à-vis the group of domestic like products is not dispositive of less favourable treatment under Article 2.1 of TBT. Instead, a panel must further analyse whether the detrimental impact on imports stems exclusively from a legitimate regulatory distinction rather than reflecting discrimination against the group of imported products." (WTO 2012c, para. 182)[26] The term "legitimate distinction" was interpreted as requiring an examination of whether the measure was pursued in an even-handed manner or whether it created discrimination (WTO 2012b, para. 341). Under this interpretation, it seems that the specific detrimental impact, not the overall policy at its base, must be justified if the regulatory distinction is legitimate, i.e., designed and applied in a balanced manner. In the *US-Clove Cigarettes* dispute, the measure at issue pursued the legitimate public health objective of reducing youth smoking. However, the exclusion of (mainly domestic) menthol cigarettes from the scope of the measure created a discriminatory impact in favour of menthol cigarettes vis-à-vis clove cigarettes—a distinction between the two types of cigarettes for which there was no legitimate policy justification.

[25] See Marceau and Wyatt (2013, p. 291) and Marceau (2013, p. 36) for an in depth discussion of these cases.

[26] In all three cases applying TBT Article 2.1, the overall *objectives* that the US identified for each measure were ultimately accepted as legitimate. Nonetheless, in each case, the US regulations were determined to be inconsistent with Article 2.1 of the TBT Agreement because their detrimental impacts did not stem exclusively from legitimate regulatory distinctions.

2.2.3 Technical Regulation to Trade Cannot Be More Restrictive than Necessary

Importantly, the *US-Tuna II* (*Mexico*) and *US-COOL* reports interpreted Article 2.2 of TBT for the first time. Article 2.2 adds to the basic non-discrimination obligation of Article 2.1 by requiring that technical regulations are not to be "more trade-restrictive than necessary to fulfil a legitimate objective, taking account of the risks non-fulfilment would create". This provision, by linking necessity to the existence of less trade-restrictive alternative measures, is strongly reminiscent of the legal test elaborated under Article XX(b) and (d) already in the GATT era prior to the conclusion of the TBT Agreement.

In determining whether or not a measure is "more trade-restrictive than necessary to fulfil a legitimate objective", *the degree of contribution* made by the measure to the legitimate objective at issue must be considered (WTO 2012c, paras. 315–317). According to the AB, the precise inquiry in this respect is as to what degree the challenged technical regulation, as written and applied, is capable of contributing and/or actually contributes to the achievement of the legitimate objective pursued by the Member (WTO 2012b, c).[27] This part of the new Article 2.2 of TBT test could be seen as largely mirroring the latest jurisprudence under Article XX of GATT as discussed above. As noted, assessing the contribution of a measure addressing climate change concerns is particularly difficult, as acknowledged by the AB, since it may be difficult to isolate the contribution of a single measure that forms part of a more comprehensive policy, and because the results obtained from climate change related measures may only be evaluated "with the benefit of time." (WTO 2007, para. 151) In the climate change context, it is unclear how contribution may be meaningfully assessed and what degree is required to satisfy the necessity element of Article 2.2 of TBT as well as GATT Article XX.

Second, because Article 2.2 of TBT prohibits technical regulations "creating unnecessary obstacles to international trade", the AB has noted that this requires an assessment of *the trade-restrictiveness* of the measure understood as "restrictions on international trade that exceed what is necessary to achieve the degree of contribution that a technical regulation makes to the achievement of a legitimate objective" (WTO 2012d, para. 319).

Then, following the detailed text of Article 2.2 of TBT, it is necessary to assess *the nature of the risks at issue* and the gravity of consequences that would arise from *non-fulfilment of the objective(s)* pursued by the Member through the technical regulation (WTO 2012b, para. 377; 2012d, para. 321). The AB has also made clear that, *in most cases*, panels will be called upon to compare the challenged

[27] Paragraph 317 *in US-Tuna II (Mexico)* report refers to paragraph 252 of Appellate Body Report, *China – Publications and Audiovisual Products* (2009). Recall also that in its *US-Tuna* report, the Appellate Body made it clear that "fulfil" does not necessarily mean "fully meet" in *US-Tuna II (Mexico)* report (WTO 2012d, para. 2012d).

measure and possible *reasonably available alternative measures* to assess, *inter alia*, whether the proposed alternative is less trade-restrictive and would make an equivalent contribution to the legitimate objective at issue (WTO 2012b, para. 378; 2012d, para. 322). Again, this aspect of the TBT Article 2.2 test bears a close affinity to the less trade-restrictive alternative test elaborated under GATT Article XX and described in Sect. 2.2 above. Indeed, the AB has even made a point of establishing the same burden of proof mechanism for reasonably available alternative claims under TBT Article 2.2 and GATT Article XX, with the complaining Member required to establish a *prima facie* violation of TBT Article 2.2 through, *inter alia*, the proposition of an alternative that the responding Member must then rebut (WTO 2012b, para. 379).

As a whole, the elements of the test under Article 2.1 and 2.2 of the TBT Agreement as developed by the AB draw importantly on the corresponding elements of the test used under Article XX of GATT 1994. The overall approach, consisting of an assessment of the necessity of a measure by looking at its degree of trade-restrictiveness and the extent to which it contributes to its objective, then a comparison of this to possible alternative measures, was first developed in the context of GATT Article XX. In *EC-Seal Products*, the AB has further clarified the relationship between the GATT and TBT, and noted that the balance between the desire to avoid creating unnecessary obstacles to trade and the right of Member's to regulate and pursue non-trade concerns is, in principle, the same under the GATT and TBT Agreement (Marceau 2014; WTO 2014).[28]

2.2.4 Labelling

It is worth noting that technical regulations include "packaging, marking, or labelling requirements as they apply to a product, process or production method" as listed in Annex 1:1 of TBT. Note that in the context of labelling in the TBT Agreement, there is no reference to "their related" PPMs, which could indicate that the labelling requirements could encompass potential non-product-related PPMs. Many developing countries, however, have argued that non-product-related PPM regulations are not "covered" and have politically challenged notifications of labelling requirements based on social considerations and timber production processes that have no physical impact on the products traded. Nonetheless, labelling requirements may become an important tool to address climate change and other non-trade concerns in a similar manner as non-product-related PPMs. As noted, in the recent WTO *US-Tuna II*, a label concerning the method of fishing tuna was found to be within the scope of the TBT Agreement—and the AB did not pronounce

[28] The AB nonetheless noted the difference in the legal tests under the GATT and TBT, and expressly rejected the importation of the "legitimate regulatory distinction" test to GATT Article I and III, see paragraphs from 5.310 to 5.312 of the AB Report in *EC-Seal Products* (WTO 2014), and paragraphs from 5.108 to 5.130 for its full reasoning in that regard.

on the measure as a PPM. Nonetheless, it suggests that a potentially non-product related PPM label may be within the scope of the TBT if in the form of a labelling requirement.

2.3 Implications for Climate Change Related Measures Under GATT and the TBT Agreement

The TBT Agreement thus represents a newly developed avenue to address climate change concerns, particularly through labelling requirements. The "legitimate regulatory distinction" test of Article 2.1 of TBT developed therein is well suited to address GHG related measures, as these measures mainly distinguish between goods based on GHG related aspects. Further, considering that such measures usually take the form of a PPM (particularly non-product-related PPMs), the TBT may become particularly relevant in this context given the express inclusion of PPMs within the scope of the TBT Agreement, and the inclusion of labelling requirements, which often refer to non-product related PPMs (TBT Agreement 1995: Annex 1.1). It is thus likely that the debates between the climate change and trade regimes will develop further in the context of the TBT. Many of the climate change regulation may be considered technical regulations and indeed the TBT Agreement may be well placed to respond to the regulatory distinctions required by most climate change related programmes; moreover, the TBT's express inclusion of PPMs and labelling requirements lends itself to measures aimed at addressing climate change. The very point of many such concerned measures is to influence process and production methods that contribute to or exacerbate climate change related problems. The TBT is thus an appropriate set of disciplines for application to climate change measures. If Article XX of GATT and the TBT Agreement seem to tolerate, at least conceptually, climate change related measure and even unilateral ones, there are questions and pitfalls associated with the use of policy exceptions within the WTO.

As noted above, the issue is complicated by the fact that different Members may regulate differently in order to reduce GHG. These differences may manifest in terms of the particular measures taken to address GHG, but also in terms of the sectors targeted by the measures. Where Members regulate differently in different sectors with the overall goal of reducing GHG emissions or controlling climate change, how, if at all, can cross-sectoral measures be compared? And, for the purposes of WTO law, should a measure imposed on one industry be compared to, and perhaps even offset, a different measure imposed on a different industry? In *US-Shrimp 21.5* the AB stated that the revised US measure was WTO-consistent because it contained a requirement of "comparable effectiveness" to the particular measure that the US imposed domestically, instead of forcing on exporters a particular policy instrument to realize the desired goal of protecting turtles. In the context of GHG related measure the question is how to measure "comparable

effectiveness" when the exporting governments take actions in different sectors or using different policy instruments.[29]

Unilateral (sectorial) action through the WTO cannot address the broad problem concerning this particular interaction between the WTO and the UNFCCC: when one Member claims it is entitled to take unilateral measures to potentially enforce the objectives of the UNFCCC through the WTO, and another Member responds that it has respected its responsibilities under the UNFCCC, but has not taken the particular approach prescribed by another Member. The fact that a Member is claiming to be acting under UNFCCC may be a relevant fact to be taken into account in an Article XX analysis (even if such UNFCCC standard would not benefit from the presumption under Article 2.4 of TBT). However on a systemic level, the answer to this problem lies in deepening international cooperation and understanding of these regimes and the way they interact in this context. As a practical matter, within the context of the WTO, the issue is addressed through comparative effectiveness: everything in the climate change and trade debate boils down to comparing the effectiveness of different policies and measures, including the comparative effectiveness of different sectorial actions. However, as noted by the AB, the time variable element in this context, the fact that most of these measures require the benefit of time for evaluation, further exacerbates the difficulty in this area. More generally, WTO rules are centered on preventing trade restrictions and distortions. They only apply to components of state policies and actions that affect trade, tilting the comely balance of comprehensive policy making.

Finally, many national GHG programmes may rely, *inter alia*, on labelling regulations and thus the TBT labelling disciplines become most relevant. Efficiency labels for manufacturing equipment (e.g., motors) are often used to inform the consumer on the efficiency levels of different products. GHG labels indicating the

[29] Assume for example, that Member A imposes certain climate-change related regulations on its domestic steel industry. The steel industry in Member A may demand that imported steel from Member B be subject to a border tax adjustment, since Member B does not impose similar regulatory measures on its steel industry and accordingly the steel industry in Member B produces cheaper steel. Member B, however, could respond that although it does not have climate change related restrictions on its steel industry, it has a number of climate change related policies in the forestry sector. It could even argue that it has undertaken more climate change mitigation responsibilities than it is required to under the UNFCCC, and therefore should not be punished simply because it has not taken the particular climate change related policy prescribed by Member A in relation to its (Member A's) steel industry. Member A, on the other hand, could respond that it is entitled to protect what it considers vital for the protection of health and the environment, including measures addressing climate change applicable to the steel sector—as the US claimed it was entitled to protect sea turtles (more than other species) in US-Shrimp. Such a situation raises fundamental questions about whether the legitimacy of Member's A border tax adjustment, and whether the central or primary concern of such GHG-related regulations as are imposed by Member A is the protection of the climate generally (and thus Member B's forestry policies may be considered "equivalent" to Member A's steel policies), or is rather concerned more narrowly with the climate effect of the steel industry (in which case the fact that Member B has a forestry program may be of little or no relevance to the question whether Member A's border tax adjustment is legitimate).

level of GHGs emitted during the production process have not been implemented so far in any country. Nonetheless, voluntary GHG labelling schemes are gaining support.[30] For example, the Carbon Trust is looking to publish a standard for the measurement of the carbon emissions in any product or service and to set up The Carbon Label Company to enable quality carbon labelling programmes. Labels may thus be a valuable tool in the context of addressing climate change concerns, particularly since they may be able to bring potential non-product-related PPMs within the scope of the TBT Agreement.

3 Other Areas of WTO Rules Relevant to Climate Change

As stated in the Introduction, this analysis is limited to only some WTO disciplines relevant to climate change policies. There are many others, particularly related to the SCM Agreement and at the GATS Agreement, which will be briefly outlined below but the relevance of these disciplines calls for much more thorough analysis as pointed out below.

3.1 Emissions Trading Schemes: GATS

A particular example of climate change policy that could raise questions within the scope of the GATS is the EU Emission Trading Scheme (ETS) or cap-and-trade scheme. As the cornerstone of the EU's climate change policies, the ETS was designed to ensure that states fulfil their commitment to reduce GHG emissions in a cost-effective manner.[31] The idea is based on the premise that overall GHG emissions are reduced to a set amount (capped) and are thus divided among the parties in the form of certificates or allowances. Through creating transferable units, the ETS established a system where parties had an economic incentive to buy and

[30] Labels can be voluntary or mandatory, along the same lines as the distinction maintained in the TBT Agreement between mandatory and voluntary measures, but PPM-related labels are explicitly covered by the TBT Agreement. Traditionally, voluntary labels were not considered to be governed by the GATT/WTO, which focuses on mandatory governmental actions. But the TBT Agreement contains a Code of Good Practices on voluntary standards to be (voluntarily) accepted by standardizing bodies. The Code contains comparable provisions to those applicable to technical regulations on trade. If the use of voluntary labels provides preferential market access to domestic like products, they could be considered more restrictive than necessary contrary to Article 2.2 of the TBT Agreement or as providing less favourable treatment contrary to article III.

[31] The international regime for emission trading certificates was created initially under the Kyoto Protocol, which outlined the general principles upon which the regime should function, and the 2001 Marrakesh Accords which include more detailed rules specific to the system. The rules contained in the Marrakesh Accords were later adopted by the parties to the UNFCCC in the COP 7 meeting in 2001.

sell emissions allowances, creating the first international trading system for GHG emissions. Despite the inclusion of provisions in the Kyoto Protocol and the UNFCCC to remedy negative effects on international trade,[32] there are still several unanswered questions with regard to WTO compatibility.

One of the primary questions posed when discussing compatibility with WTO rules is whether trade in allowances can be considered trade in products or in services, according to the WTO definition. One approach that has been suggested would be to place them under the category of "financial assets," as defined in the Annex to GATS (Vranes 2009; General Agreements on Trade in Services 1995). If the ETS is thus placed under the category of "financial assets", then the question becomes whether ETS rules are GATS compliant.[33] In any case, GATS Article XIV may be applicable in justifying any violations of commitments based on environmental considerations (Vranes 2009).

Another aspect that must be considered is the investment dimension of GATS, based on mode 3 (commercial presence), relating to foreign direct investment. GATS contains a prohibition on imposing local content requirements that adversely affect competitive conditions for like foreign services and service suppliers. The Marrakesh Accords grant host states the right to determine whether a Clean Development Mechanism (CDM), for instance, contributes to sustainable development. Challenges may arise as to whether Members reject foreign projects based on local content requirements. The question remains whether such a measure could be justified under GATS Article XIV exceptions for environmental reasons (Vranes 2009).

3.2 Free Allowance: The SCM Agreement and Countervailing Duties (CVDs)

Governments may also choose to encourage GHG mitigation through subsidies. The SCM Agreement contains disciplines for two main types of subsidies—

[32] Kyoto Protocol: 'the Parties included in Annex I shall strive to implement policies and measures under this article in such a way as to minimize adverse effects, including the adverse effects of climate change, effects on international trade…' and the UNFCC: 'measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade', at Art 3, para 5.

[33] Primarily, under GATS, the EU members have used the Understanding on Commitments in Financial Services to schedule their obligations. Under the 'market access restrictions' heading, Members (those who accepted the Understanding without reservations) are obliged to allow their residents to purchase, in the territory of another Member, financial services as outlined in the Annex. Further, by virtue of the national treatment obligation, members must allow non-residents also to provide these financial services within their territory. They must also remove effects of non-discriminatory measures that limit financial service suppliers from providing financial services in their territory. The EU Member States have also made market access commitments with regard to financial services under Mode 1 (cross border supply) and Mode 2 (consumption abroad).

actionable subsidies and prohibited subsidies which are covered by the SCM if they are specific. An actionable subsidy may be countervailed at the border, or ruled illegal in a dispute if it provides a benefit that causes adverse effects (serious prejudice, injury, nullification or impairment) to the interests of another Member. A prohibited subsidy is one that is contingent upon export performance (export subsidies) or upon the use of domestic rather than imported products in production (domestic content requirements) and it can also be countervailed or challenged directly.[34] If free allowances or other sorts of regulatory or fiscal benefits are provided to the industry that will export processed goods, the importing country may impose CVDs against such imports.

It is obvious that the WTO-compatibility of subsidies used as an incentive to encourage production or use of climate change friendly inputs needs to be examined in the context of the various disciplines of the SCM Agreement—but it is not done in the context of the present paper.

3.3 Several Other Areas of WTO Law Are Relevant to Climate Change Related Measures

There are many more areas of the WTO that are very relevant to climate change related policies. For example, can preferential arrangements be made conditional upon climate change related actions? How should the Enabling Clause be interpreted in this context? What about market access commitments scheduled under the Government Procurement Agreement, can they be conditioned on climate change actions? And if so, how should those conditions be drafted and operated? What about regional trade agreements that would include market access conditions based on climate change related policy? How should GATT Article XXIV be interpreted in this regard? In relation to rules of origin—to what extent can climate change considerations condition market access as regulated by those agreements? Specific agreements such as the Customs Valuation Agreement and the Antidumping Agreement could also be called into question. The same may be argued for the TRIMS Agreement in relation to climate change-related investment measures. The WTO Trade-Related Intellectual Property Rights Agreement (TRIPS) is also relevant for the climate change debate. Intellectual property right issues—including patents and compulsory licenses—are closely linked to issues of technological progress and innovation. These issues are central to ongoing climate change discussions, but are not analysed here.

[34] A prohibited subsidy may be challenged in dispute settlement or it may be countervailed.

4 Conclusions

Policies to mitigate climate change are not costless. They inevitably have an impact on relative costs and returns among economic activities at the national and international level. The size of these effects depends on a range of factors, including the relative level of mitigation efforts among countries, the degree of uniformity of different jurisdictions in the approach to combating climate change, the efficiency of the measures adopted, and the contribution of innovation and technological discovery. All these elements feed into the competitiveness consequences of climate change policies. The focus of this paper has been on the nature of the response to these consequences on the part of governments, and the implications of that response for the interaction between the climate change policy and trade policy.

Different levels and types of climate change mitigation effort among countries have direct environmental consequences because of leakage. The international mobility of resources and the presence of trade mean that carbon constraints in one country can lead to the relocation of economic activity to another country where carbon constraints are less costly. If countries were to accept carbon emission constraints at the national level, sectoral leakage could be neutralized through adjustments in carbon constraints anywhere else in the economy chosen by a government. That would mean that the leakage problem was addressed from a purely environmental perspective, but in the context of inter-sectoral resource shifts among countries. The only way to ensure the absence of inter-sectoral consequences would be with an internationally uniform climate mitigation policy such as a carbon tax or a unified carbon price based on auctioned emission permits. Neither of these policies seems to be likely to see the light of day. It is against this reality that consideration of the competitiveness consequences of climate change mitigation policies seems inevitable. Carbon leakage and competitiveness concerns appear inseparable in practical terms.

The ultimate goal is a policy response that would maximize climate change policy effectiveness, minimize economic costs and minimize international friction through the attainment of a stable understanding of how trade policy and climate change policy should interact. It is the last of these issues upon which this chapter primarily focuses.

In broad terms, the competitiveness consequences of climate change policy may be addressed from a pure competitiveness perspective. First, governments may attempt to raise the cost of imports through adjustments at the border to neutralize additional domestic production costs incurred by sectors as a result of GHG emission reduction policies. Most of these would need to be justified under Article XX of GATT or based on legitimate regulatory distinctions under the TBT. Second, they may use subsidies to lessen the competitiveness consequences of carbon constraint costs, thus relieving pressure on border adjustment measures. In practice, governments might resort to a combination of these approaches, although this chapter has not analysed the latter (Marceau et al. 2011).

The ability to compare alternatives and outcomes is at the heart of any effort to shape policies that address regime differences. Comparisons among policies are also central to legal determinations of WTO-consistency. One challenge in thinking about a trade policy context for policies aimed at addressing climate change is that the latter are frequently directed at the plant or firm level in given sectors. Except where the base for a climate change mitigation policy is consumption and a product (e.g. a tax on fuel consumption), this complicates determinations in the WTO because in that context most of the measures affect products, not production entities or facilities.

Potential clearly exists for friction that could both weaken climate change efforts and undermine the trading system. This danger could be minimized if governments were to find ways of identifying mutually beneficial trade-offs as they react to the need to mitigate climate change. But deeper cooperation than has so far been demonstrated is needed. A first approach could be to reduce uncertainty by systematically identifying where the potential clash points are between climate change and trade policy, and then considering how to manage them.

There could be a way to de link the environmental and competitive aspects of the situation described above, but it would require a far greater degree of international cooperation than unilateral trade-related responses. If all countries embraced carbon constraint policies at the national level, carbon leakage from one jurisdiction to another could be neutralized in the aggregate through inter-sectorial adjustments to GHG emission polices within the country where leakage led to increased emissions. If, for example, some steel manufacturers migrated from a more carbon-constrained jurisdiction to a less constrained one, the latter jurisdiction could adjust its GHG emission policies in, say, the forestry sector in order to maintain the same national level of climate change mitigation effort.

Two factors would make this approach challenging. The first is the requirement that all major economies, including some emerging economies not covered by Kyoto Protocol emission reduction commitments, would need to subscribe internationally to GHG emission caps at the national level. Even though such commitments would undoubtedly vary in line with the recognized United Nations Framework Convention on Climate Change (UNFCCC) principle of "common but differentiated responsibilities and respective capabilities", agreement on the distribution of the burden may prove elusive. Moreover, it may not be in line with the lead role of developed countries to combat climate change and the effects thereof under the UNFCCC.[35] The second is that changes in international competitiveness at the industry level arising from differential carbon constraints would need to be seen in a similar light to changes in comparative advantage beyond a

[35] UNFCCC Article 3(1) states: "The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof."

reflection of unfairness in a sectorial context arising from the apportionment of the burden of addressing climate change.

A more profound analysis is needed of how to manage both environmental degradation and sustainable development. In terms of the impact of trade policy and the WTO rules on this relationship, it would be useful to explore further the interaction between potential border adjustment measures and subsidies, and the way they interact. More fundamentally, against the background of a constructive interpretation of the principles of sustainable development and common but differentiated responsibility and respective capabilities, we need to agree how far competitiveness considerations should shape both climate change policy and trade policy.

Much more research is necessary to better understand the implication of our actions to deal with climate change and related costs, and food security and trade. Article 2 of the UNFCCC provides that stabilisation of GHG concentrations in the atmosphere should be done within a timeframe that "ensures that food production is not threatened." Extreme weather conditions and shifts due to climate change have impacted agricultural patterns that in turn impacts trade patterns. Similar questions may arise in the context of ethanol crops which are now used to replace industrial fuels instead of for food. A greater degree of integration of climate change and trade dimensions in agriculture is an important means to ensure food security given these shifts. Can the potential of trade be harnessed to put policies in place to ensure affordable food? In the event of a food crisis Members may block the export of agricultural products to ensure food security at home through the operation of Article XI:1 of GATT and Article 12 of the Agriculture Agreement. Article XI of GATT allows export restrictions in order to temporarily relieve or prevent critical shortages of food or essential products.[36] As noted by the AB in *China-Raw Materials*, such export restrictions can only be temporary and are to be distinguished from government actions managing long-term environmental problems that should be examined under Article XX of GATT. As climate change continues to disrupt agricultural patterns, these issues will become more important to understand and explore in the future.

References

Baron R et al (2007) Sectoral Approaches to Greenhouse Gas Mitigation - Exploring Issues for Heavy Industry. IEA Information Paper, IEA/OECD, Paris

Charnovitz S (2000) The supervision of health and biosafety regulation by world trade rules. Tulane Environ Law J 13:271–302

[36] See the Appellate Body Report (WTO 2012a), for a discussion of what products constitute "essential products" within the meaning of that provision. China argued in that case that certain raw materials were "essential products"; the AB ruled however that raw materials are not essential products, whereas food items are.

Charnovitz S (2002) The law of environmental "PPMs" in the WTO: debunking the myth of illegality. Yale J Int Law 27(59):59–110
Condon B (2009) Climate change and unresolved issues in WTO law. J Int Econ Law 12 (4):896–926
Conrad C (2011) Processes and Production Methods (PPMs) in WTO law: interfacing trade and social goods. Cambridge University Press, Cambridge, UK
Gaines S (2002) Processes and production methods: how to produce sound policy for environmental PPM-based trade measures. Columbia J Environ Law 27(2)
Holzer K (2014) Carbon-related border adjustment and WTO law. Edward Elgar Publishing Ltd
Howse R, Regan D (2000) The product/process distinction: an illusory basis for disciplining 'Unilateralism' in trade policy. Eur J Int Law 11(2):249–289
Hudec R (2000) The product-process doctrine in GATT/WTO jurisprudence. In: Bronckers J, Jackson J, Quick R (eds) New directions in international economic law: essays in honour of John H. Jackson. Kluwer Law International, London, UK
Hudec R (2003) GATT/WTO constraints on national regulation: Requiem for an 'Aims and Effects' test. Int Lawyer 32:619–649
General Agreement on Trade in Services (1995) https://www.wto.org/english/docs_e/legal_e/26-gats_01_e.htm. Accessed 20 July 2015
Marceau G (2013) The new TBT jurisprudence in US-Clove Cigarettes, WTO US-Tuna II, and US – COOL. Asian J WTO Int Health Law Policy 8(1):1–36
Marceau G (2014) More about the TBT Agreement in the AB Report in EC – Seal Products. RECIEL (forthcoming)
Marceau G, Wyatt J (2013) The WTO's efforts to balance economic development and environmental protection: a short review of appellate body jurisprudence. Latin Am J Int Trade Law 1 (1):291–314
Marceau G, Low P, Reinaud J (2011) The Interface Between the Trade and Climate Regimes: Scoping the Issues. Staff Working Paper, ERSD-2011-1
Pauwelyn J (2007) U.S. Federal Climate Change Policy and Competitiveness Concerns: The Limits and Options of International Trade Law. Working Paper, NI WP 07-02 Nicholas Institute for Environmental Policy Solutions, Duke University. http://nicholas.duke.edu/institute/internationaltradelaw.pdf. Accessed 30 July 2010
Read R (2011) Process and production methods and the regulation of international trade. In: Perdikis N, Read R (eds) The WTO and the regulation of international trade: recent trade disputes between the European Union and the United States. Edward Elgar, Cheltenham, UK & Northampton, MA, USA
General Agreement on Tariffs and Trade (1987) United States – Taxes on Petroleum and Certain Imported Substances ("US-Superfund"). Report of the Panel, L/6175-34S/136, Geneva
General Agreement on Tariffs and Trade (1991) United States – Restrictions on the Imports of Tuna (Tuna Dolphin I). Report of the Panel, DS21/R - 39S/155, Geneva
General Agreement on Tariffs and Trade (1994) United States – Restrictions on Imports of Tuna (Tuna Dolphin II). Report of the Panel, DS29/R, Geneva
Vranes E (2009) Climate change and the WTO: EU emission trading and the WTO disciplines on trade in goods, services and investment protection. J World Trade 43(4)
Wiers J (2001) WTO rules and environmental production and processing methods (PPMs). ERA Forum 4:101–111
World Trade Organization (1996a) Japan—Alcoholic Beverages II. Appellate Body Report, WT/DS8/AB/R; WT/DS10/AB/R; WT/DS11/AB/R, Geneva
World Trade Organization (1996b) United States—Standards for Reformulated and Conventional Gasoline (US-Gasoline). Appellate Body Report, WT/DS2/AB/R, Geneva
World Trade Organization (1997) India—Patent Protection for Pharmaceutical and Agricultural Chemical Products ('India-Patents'). Appellate Body Report, WT/DS50/AB/R
World Trade Organization (1998) United States—Import Prohibition of Certain Shrimp and Shrimp Products ('US-Shrimp'). Appellate Body Report, WT/DS58/AB/R, Geneva

World Trade Organization (1999) Korea—Definitive Safeguard Measures on Imports of Some Dairy Products Dairy (Korea—Dairy). Appellate Body Report, WT/DS98/AB/R, Geneva
World Trade Organization (2000a) Argentina—Safeguard Measures on Imports of Footwear ("Argentina—Footwear (EC)"). Appellate Body Report, WT/DS121/AB/R, Geneva
World Trade Organization (2000b) Korea - Measures Affecting Imports of Fresh, Chilled and Frozen Beef. Appellate Body Report, WT/DS161/AB/R; WT/DS169/AB/R, Geneva
World Trade Organization (2001) European Communities – Measures Affecting Asbestos and Asbestos-Containing Products ('EC-Asbestos'). Appellate Body Report, WT/DS135/AB/R, Geneva
World Trade Organization (2004) European Communities – Conditions for the Granting of Tariff Preferences to Developing Countries ("EC-Tariffs"). Appellate Body Report, WT/DS246/AB/R, Geneva
World Trade Organization (2005a) Dominican Republic - Measures Affecting the Importation and Internal Sale of Cigarettes ('Dominican Republic-Cigarettes'). Appellate Body Report, WT/DS302/AB/R, Geneva
World Trade Organization (2005b) United States – Measures Affecting the Cross-Border Supply of Gambling and Better Services ('US- Gambling'). Appellate Body Report, WT/DS285/AB/R, Geneva
World Trade Organization (2007) Brazil – Measures Affecting Imports of Retreaded Tyres ("Brazil-Tyres"). Appellate Body Report, WT/DS332/AB/R, Geneva
World Trade Organization (2008) China-Measures Affecting Imports of Automobiles ("China-Automobiles"). Appellate Body Report, WT/DS339/AB/R; WT/DS340/AB/R; WT/DS342/AB/R, Geneva
World Trade Organization (2009) China – Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products ('China - Audiovisual Services'). Appellate Body Report, WT/DS363/AB/R, Geneva
World Trade Organization (2012a) China – Measures Related to the Exportation of Various Raw Materials ('China - Raw Materials'). Appellate Body Report, WT/DS394/AB/R; WT/DS395/AB/R; WT/DS398/AB/R, Geneva
World Trade Organization (2012b) United States – Certain Country of Origin Labeling (COOL) Requirements (US-COOL). Appellate Body Report, WT/DS384/AB/R, Geneva
World Trade Organization (2012c) United States – Measures Affecting the Production and Sale of Clove Cigarettes, ('US – Clove Cigarettes'). Appellate Body Report, WT/DS406/AB/R, Geneva
World Trade Organization (2012d) United States - Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Products (US-Tuna II (Mexico)). Appellate Body Report, WT/DS381/AB/R, Geneva
World Trade Organization (2014) European Communities – Measures Prohibiting the Importation and Marketing of Seal Products. Appellate Body Report, WT/DS400/AB/R; WT/DS401/AB/R, 'EC-Seal Products', Geneva
World Trade Organization, United Nations Environment Programme (2009) Trade and Climate Change: WTO-UNEP Report, World Trade Organization, Geneva

Part II
Domestic Climate Change Policies and the WTO

Compatibility of Eco-Labeling Scheme with WTO and Its Potentially Conflicting Impacts

Soyoung Lee

1 Introduction

As there is an overwhelming global consensus that greenhouse gas emissions must be reduced to mitigate global warming, many countries have established eco-labeling or other similar schemes at regional, national and international levels. And the incentive to use eco-labeling to products for the purpose of providing information pertaining to environmental friendliness continues to rise. Although eco-labeling scheme is considered a means to protect and conserve the environment while promoting sustainable production and consumption, it may constitute a protectionist measure and operate as a trade barrier in international trading system. For instance, eco-labeling schemes that countries establish and develop as part of their commitment to taking action on climate change have tendency to influence international trading system. As eco-labeling informs consumers about the environmental friendliness of products, including their environmental characteristics and the environmental impact of their performance, they may influence preference and behavior of consumers. Consequently, this may significantly affect the trading system as market is likely to shift in response to change in consumer demand in products.

There are no specific rules in the WTO that directly govern the issue of climate change. Climate change policy can be compatible with current rules of the WTO, but it can also be trade-distorting and conflict with specific WTO rules. It is quite difficult to confirm whether climate change policies adopted by countries are compatible with the WTO rules due to the absence of clear guidelines. Domestic measures aimed at mitigating climate change may be constrained by the WTO rules. This paper highlights issues associated with eco-labeling schemes as part the

S. Lee (✉)
Crouser & Suh PLLC, #6 251 Havard St., Boston, MA 02446, USA
e-mail: grace217@gmail.com

D.-Y. Park (ed.), *Legal Issues on Climate Change and International Trade Law*,
DOI 10.1007/978-3-319-29322-6_2

commitment to taking action on climate change that may potentially be incompatible with the current WTO rules.

Two particularly important issues of eco-labeling in the WTO context are discussed in this paper. The most controversial issue has been to what extent the use of production and process methods (hereinafter "PPMs"), non-product-related PPMs (hereinafter "NPR PPMs") in particular, is covered by Agreement on Technical Barriers to Trade (hereinafter "TBT Agreement"). Another controversial issue is whether measures that distinguish between otherwise "like products" exclusively on the basis of the way in which they were produced are allowed under the TBT Agreement. This also leads to the discussion of whether products that differ only in their PPMs could be distinguished as "unlike" based on the degree of environmental friendliness.

This paper will give an overview of the applicability of the WTO regime, the TBT Agreement in particular, to eco-labeling schemes. The compatibility of eco-labeling schemes based on PPMs, potential challenges and implications of eco-labeling schemes in the WTO will also be discussed. Further, the concept of "like products" under the TBT Agreement based on the recent WTO jurisprudence, and its future implications for eco-labeled products will be discussed in details. Although the issue of eco-labeling may also be covered by the GATT 1994 the present analysis will focus only on the coverage of eco-labeling under the TBT Agreement due to the complexity of the issues that are already presented under the TBT Agreement.

2 Eco-Labeling for Climate Change Policy

Eco-labeling seeks to enlighten consumers about the products' nature of environmental friendliness by indicating an environmentally friendly product based on certain standards or criteria developed by public or private bodies.[1] It acts as an instrument for improving the environmental quality of the products, as it provides information about the product's whole life cycle, including PPMs, consumption as well as waste disposal.

As climate change enters further into public consciousness, consumer preference and behavior are likely to be influenced by eco-labeling, especially when consumers consider eco-labeling as an effective instrument to reduce greenhouse gas emissions associated with their purchases. Change in consumer preference and behavior may create incentives for manufacturers and initiate the process by

[1] ISO has classified eco-labels in three following categories: Type I: voluntary, multiple criteria (life-cycle or PPM analysis) based third-party practitioner programs that award labels (Germany's Blue Angel, Nordic White Swan); Type II: informative environmental claims awarded by the industry association or company itself ('organically-grown', 'energy-efficient', 'ozone-friendly'); Type III: quantified product information labels based on independent verification using an agreed set of parameters ('eco-toxic', 'biodegradable'). See www.iso.org.

which manufacturers innovate so to acquire advantages in terms of environmental performance (Kloeckner 2012). In general, eco-labeling scheme can be categorized into three criteria; first, whether the scheme is administered by government or private bodies; second, whether the nature of such scheme is mandatory or voluntary; third, whether such scheme is associated with product-related PPMs and/or NPR PPMs (Vranes 2011).

Many countries, developed countries in particular, have established and developed various eco-labeling schemes in efforts to address climate change. Environmental issues in climate change have been of particular interest to policy makers and researchers in many developed countries such as the U.S. Today, as a pivotal player in the international climate change regime, the U.S. remains firmly committed to the goal of environment protection and promotion of sustainable environment. For this purpose, the U.S. has taken important steps and put forth initiatives to help mitigate climate change.

According to the EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks report that identifies and quantifies the U.S.'s primary sources and sinks of greenhouse gases, the primary greenhouse gases emitted by human activities in the U.S. was CO_2, representing approximately 82.5 % of total greenhouse gas emission. And the largest source of overall greenhouse gases was fossil fuel combustion. In the U.S., the five major fuel consuming sectors contributing to CO_2 emissions from fossil fuel combustion were found to be industrial, residential, commercial, electricity generation, and transportation. CO_2 emissions are produced by the electricity generation sector as they consume fossil fuel to provide electricity to one of the other four sectors (EPA 2014).

Among various initiatives of climate change, ENERGY STAR is a good example of the U.S.'s federal leadership in eco-labeling schemes as part of its commitment to climate change policy.[2] Aimed at protecting the environment by reducing greenhouse gas emissions and helping consumers to identify products with enhanced energy efficiency, ENERGY STAR is a voluntary program backed by U.S. Environmental Protection Agency (hereinafter "EPA"), and it covers more than 50 product categories. It is the national symbol for energy efficiency and helps consumer identify high-quality and energy-efficient products, commercial and industrial buildings and homes as well. ENERGY STAR has acted as an instrument to reduce the energy use in homes, buildings, and industry, to realize significant

[2] The ENERGY STAR program was established by EPA in 1992. Under the authority of the Clean Air Act Section 103(g), the EPA Administrator is directed to "conduct a basic engineering research and technology program to develop, evaluate, and demonstrate non-regulatory strategies and technologies for reducing air pollution." In 2005, Congress enacted the Energy Policy Act. Section 131 of the Act amends Section 324 (42 USC 6294) of the Energy Policy and Conservation Act, and "established at the Department of Energy and the Environmental Protection Agency a voluntary program to identify and promote energy-efficient products and buildings in order to reduce energy consumption, improve energy security, and reduce pollution through voluntary labeling of or other forms of communication about products and buildings that meet the highest energy efficiency standards." (Energy Star n.d.).

reductions in greenhouse gas emissions. Products that earn the ENERGY STAR label meets strict guidelines set by the EPA and prevent greenhouse gas emissions.[3] In recognition of significance of uniform voluntary labeling programs across the world, the EPA has entered into international partnership with Australia, Canada, European Union, Japan, New Zealand, Switzerland and Taiwan (Energy Star n.d.). This partnership seeks to unify labeling programs by providing a single set of energy-efficiency qualifications. Therefore, if products are approved for the label in one country, they are licensed to display the label in other participating countries.

There are also a number of private eco-labeling schemes associated with climate change policy in the U.S. In the U.S., private companies have been exploring eco-labeling options in response to increasing demands for green products. For instance, the U.S.'s non-profit Carbon Fund has created criteria determining the carbon footprint, "Certified Carbon Free" label based on ISO life cycle assessment, the GHG protocol and the UK Carbon Trust's Carbon Footprint Measurement Methodology (Carbonfund.org n.d.). For-profits private companies like Timberland and The Home Depot have also developed their own eco-label for environmentally friendly products. For instance, Timberland, an American manufacturer and retailer of outdoor wear has launched its own eco-label "Green Index" in 2007 for the purpose of providing consumers with footprint information of their products, modeled after USDA nutrition.[4] The Home Depot also launched a new product label called "Eco Options" in 2007 which is based on strict criteria to designate products as environmentally friendly in "Sustainable Forestry, Clean Air, Water Conservation, Energy Efficient, and Healthy Home." (Home Depot n.d.). Generally, eco-labeling schemes developed by the private bodies are based on their own approval criteria without any government mandate on how best to disclose characteristics that communicate environmental friendliness.

In the WTO context, eco-labeling schemes established and developed by and within a member state may face few challenges. These schemes are usually set at national or local level, thus most likely without consultation with foreign producers. Criteria used for eco-labeling may not be relevant for foreign producer and some foreign producers may have little or no access to technology critical for compliance, which also means the costs for compliance may be prohibitive for those foreign producers (UNCTAD/FIELD 2003). Further, diffusion of labeling types and objectives add to confusion and uncertainty. These may potentially act as trade barriers to some of these foreign producers in the world trading system. Thus, eco-labeling is a potential source of dispute at the WTO.

[3] ENERGY STAR products must be third-party certified based in EPA recognized laboratories in order to earn the label. Approximately 85 % of Americans recognize the label, about 75 % of those households that knowingly purchased a product with the label considered the label as an important factor in their decision to purchase (Energy Star n.d.).

[4] Timberland's Green Index measures three areas of product footprints: (1) Climate impact: The greenhouse gas emissions from the raw materials and manufacturing of products; (2) Chemicals used: The use of toxic chemicals in manufacturing of products and materials; (3) Materials used: The use of organic, recycled or renewable materials used in products (Ecolabel Index n.d.).

3 Eco-Labeling in the GATT/WTO Regime

3.1 Applicability of WTO Regime to Eco-Labeling Schemes

As climate change has become perhaps the most challenging and significant issue eco-labeling schemes have already been established and developed by many developed countries. Recognizing the growing concerns over diversity and transparency of various eco-labeling schemes and that they may constitute *de facto* non-tariff barrier for foreign products, the WTO assigned the labeling issue to the Committee on Trade and Environment. Labeling is on the CTE's work program in which the committee is assigned to review issues including labeling, technical regulations and standards, packaging, etc. And Paragraph 32 (iii) of the 2001 Doha Declaration assigned the CTE to focus on eco-labeling.[5] The TBT Committee also regularly discusses product standards and eco-labeling under "specific trade concerns." (WTO n.d.)

Although there are no WTO rules specific to the issue of climate change, the WTO is an appropriate forum to support eco-labeling schemes addressing climate change policy with its disciplines that enhance fair trade. And the TBT Agreement is likely to come into play when it comes to eco-labeling schemes associated with climate change.[6] Climate change policies adopted by member states may have an impact on international trade, as they may limit market access for some countries.[7] They are particularly troublesome for developing countries for they often do not have capacity to comply with the eco-labeling criteria (Zhang and Assuncao 2002). And this may eventually lead to unnecessary trade barriers or disguised restriction on international trade, which are prohibited in the WTO.

[5] In 2001, the Doha Ministerial Conference made this an issue of special focus for the regular CTE. See paragraph 32(iii) of the Doha Declaration. See also (WTO n.d.).

[6] The GATT 1994 also contains rules potentially applicable to eco-labeling schemes. However, the panel is likely to review whether the measure at issue is compatible with the TBT Agreement before reviewing the GATT 1994. In *EC-Asbestos* case, the Panel found that "Both the GATT 1994 and the TBT Agreement form part of Annex 1A to the WTO Agreement and may apply to the measures in question. Consequently, although we do not in principle exclude application of the TBT Agreement and/or the GATT 1994 to the Decree, we have to determine the order in which we should consider this case. According to the Appellate Body in *European Communities – Regime for the Importation, Sale and Distribution of Bananas*, when the GATT 1994 and another Agreement in Annex 1A appear *a priori* to apply to the measure in question, the latter should be examined on the basis of the Agreement that deals 'specifically, and in detail,' with such measures." (WTO 2001, para. 8.16).

[7] It is important to note that the WTO rules apply only to eco-labeling schemes administered and regulated by the government, not voluntary, schemes developed by private bodies. Thus, the TBT Agreement is applicable only to WTO members, but not private bodies. However, the TBT Agreement ensures that members must "take such reasonable measures as may be available to them" to ensure that all bodies within their territories comply with the TBT Agreement.

3.2 Regulation of Eco-Labeling Under the TBT Agreement

3.2.1 Overview of TBT Agreement

The TBT Agreement, which is considered to appropriately balancing rights and obligations for both mandatory and voluntary eco-labeling schemes, contains rules potentially applicable to eco-labeling schemes (WTO n.d.). "Technical regulations", "standards", and "conformity assessment procedure" are covered in the TBT Agreement.[8] The principal difference between technical regulations and standards is that technical regulations are mandatory whereas standards are voluntary. Mandatory eco-labeling scheme restricts market access for products that do not comply with the labeling requirements. Voluntary eco-labeling, despite its voluntary nature seeks to influence the consumer's perception of products, and thus it may negatively influence the competitive relationship with other products (Vranes 2011). In this sense, both mandatory and voluntary eco-labeling schemes incur the risk of violating the WTO rules. Although eco-labeling can be mandatory or voluntary, most eco-labeling schemes are considered as voluntary standards. Therefore, generally, in the context of the TBT Agreement, voluntary eco-labeling schemes are considered "standards."[9]

The Annex I.1 of TBT Agreement defines technical regulation as "document which lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory." Technical regulation may also "include or deal exclusively with terminology, symbols, packaging, marking or labeling requirements as they apply to a product, process or product method." The Annex I.2 of TBT Agreement also defines standards as "document approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory." Just like technical regulations, standards may also "include or deal exclusively with terminology, symbols, packaging, marking or labeling requirements as they apply to a product, process or product method." The WTO's Code of Good Practice, which governs the preparation, adoption and application of such standards provide substantive obligations for standards.

[8] Conformity assessment procedures are applicable to technical regulations and standards. They are used to determine whether a technical regulation or standard has been complied with. This paper will focus on "technical regulations" and "standards" only.

[9] The criterion of mandatory or voluntary nature is not always clear in practice. The finding of *U.S.-Tuna II* appears to have blurred the distinction between a mandatory technical regulation and voluntary standard. See WTO (2011c, 2012c).

3.2.2 Rules and Principles of TBT Agreement

Non-discrimination Principles in the TBT Agreement

TBT Agreement provides common rules and principles that are applicable to both technical regulation and standard that are similar to those found in the GATT 1994. The core non-discrimination principle, which can also be found in the GATT 1994, has two elements of "most-favored nation treatment" and "national treatment," obligations not to discriminate among imported like products and between imported and domestic like products. The non-discrimination principle can be found in Article 2.1 of the TBT Agreement for technical regulations, and Annex 3 Paragraph D of Code of Good Practice for standards. The TBT Agreement also ensures that technical regulations, standards must not be prepared, adopted or applied so as to create unnecessary obstacles to international trade. This obligation not to create unnecessary obstacles to international trade can be found in Article 2.2 of the TBT Agreement for technical regulations, and Annex 3 Paragraph E of Code of Good Practice for standards.

Article 2.1 of the TBT Agreement states "Member shall ensure that in respect of technical regulations, products imported from the territory of any Member shall be accorded treatment no less favourable than that accorded to like products of national origin and to like products originating in any other country." Article 2.2 of the TBT Agreement further states that "technical regulations shall not be more trade-restrictive than necessary to fulfill a legitimate objective," and "legitimate objectives" for technical regulations include "national security requirements; the prevention of deceptive practices; protection of human health or safety, animal or plant life or health, or the environment."[10]

The Paragraph D of the Annex 3 of the Code of Good Practice also states the same for "standards" by providing that "the standardizing body shall accord treatment to products originating in the territory of any other Member of the WTO no less favourable than that accorded to like products of national origin and to like products originating in any other country." Like Article 2.2, Paragraph E of the Code of Good Practice constitutes a stand-alone provision that requires that standards do not create unnecessary obstacles to international trade.[11] Therefore,

[10] "Members shall ensure that technical regulations are not prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade. For this purpose, technical regulations shall not be more trade-restrictive than necessary to fulfil a legitimate objective, taking account of the risks non-fulfilment would create. Such legitimate objectives are, *inter alia*: national security requirements; the prevention of deceptive practices; protection of human health or safety, animal or plant life or health, or the environment. In assessing such risks, relevant elements of consideration are, *inter alia*: available scientific and technical information, related processing technology or intended end-uses of products." The use of "*inter alia*" indicates that a list of legitimate objectives is not exhaustive. See Article 2.2 of TBT Agreement.

[11] "The standardizing body shall ensure that standards are not prepared, adopted or applied with a view to, or with the effect of, creating unnecessary obstacles to international trade." See Annex 3, Paragraph E of Code of Good Practice.

eco-labeling schemes would have to be scrutinized for necessity test under Article 2.2 or Paragraph E of the Code, even if they do not incur *de facto* discriminatory effects (Vitalis 2002).

Unlike technical regulations, "unnecessary obstacles to international trade" is not defined for standards, and the term "legitimate objective" is not used in the analogous provision associated with standards. However, given that provisions associated with standards mirror those of technical regulations, and that effects of voluntary standards may actually be similar to those of mandatory regulatory measures, the same reasoning can be equally applied to the case of standards. Thus the question would be to what extent it can be proved that eco-labeling scheme is the least-trade restrictive and necessary to fulfill a legitimate objective.

Following the Past WTO Jurisprudence

Article 2.1 of the TBT Agreement is similarly worded with the national treatment and most-favored-nation principle of the GATT 1994 in that imported products must be treated no less favorably than domestic like products as well as imported like products from any other member states. However, they differ in that the GATT 1994 provides Article XX exceptions for affirmative defenses for violations, whereas there are no similar provisions in the TBT Agreement (Marceau and Trachtman 2006). Generally, if a disputed measure is found to be non-discriminatory, its necessity is not tested under Article XX of the GATT 1994. However, Article 2.2 of the TBT Agreement is a stand-alone provision used to determine whether a measure is more trade restrictive than necessary (Marceau and Trachtman 2006). Therefore, unlike Article XX of the GATT 1994, the necessity of a measure at issue can still be tested even if a disputed measure is found to be non-discriminatory under the TBT Agreement (Du 2007).

To what extent Article 2.1 would follow the jurisprudence of the non-discrimination principles of the GATT 1994 has remained uncertain and been a matter of debate for a long time. However, in recent case of *U.S.-Clove Cigarettes* case, the Appellate Body emphasized that the terms of Article 2.1 should be interpreted "in the light of the specific context provided by the TBT Agreement." The Appellate Body also added that previous WTO jurisprudence in the context of Article III of the GATT 1994 will be "instructive in assessing the meaning of 'treatment less favourable,' provided that the specific context in which the term appears in Article 2.1 of the TBT Agreement is taken into account." (WTO 2012b, para. 180).

3.3 NPR PPMS in the Purview of TBT Agreement

When it comes to eco-labeling, it is not the product itself but usually the PPMs that determine the environmental friendliness of a product. The question is whether

eco-labeling criteria could be used to distinguish otherwise like products based on PPMs, for instance by identifying the amount of the use of energy or greenhouse gas emissions associated with a product. The question of measures distinguishing between otherwise like products based on PPMs, especially NPR PPMs, whether a product produced with less greenhouse gas emissions is any different from a product produced with more greenhouse gas emissions has been subject to controversies.

The use of criteria linked to PPMs has been one of the most controversial issues in the eco-labeling debates within the WTO, and has become more pronounced recently, largely because currently there is no clear indication that NPR PPMs in particular is within the purview of the TBT Agreement. Yet, many WTO members notify eco-labeling schemes based on NPR PPMs to the WTO for the purpose of ensuring transparency. The coverage of NPR PPMs under the TBT Agreement would depend on how the WTO would interpret the relevant provisions of the TBT Agreement.

The WTO rules explicitly require that all "like" products are treated equally irrespective of the country of origin and prohibits unequal and discriminatory treatment between "like products" from WTO trading partners as well as between domestic and foreign "like products." However, uncertainty remains as to whether eco-labeling based on PPMs can be used to differentiate between products. Although some PPMs will leave a certain trace on a final product, or affect characteristics of a final product, most PPMs are typically associated with environmental impacts of PPMs.

It is generally accepted that WTO member states have rights to set criteria for the way products are produced, where PPMs are incorporated or leave a trace in the final product. In other words, eco-labeling scheme based on PPMs criteria may be compatible with the TBT Agreement where final products are distinguishable from each other as a result of different PPMs (National Foreign Trade Council 2007). However, opinions differ as to whether the use of NPR PPMs in eco-labeling should also be covered by the TBT Agreement. Developed countries emphasize the importance of transparency and argue that eco-labeling schemes should be subject to discipline under the WTO rules. Thus, they generally favor the interpretation that NPR PPMs should be covered by the TBT Agreement. On the other hand, developing countries generally side with the interpretation that NPR PPMs are not covered by the TBT Agreement based on the concern that inclusion of NPR PPMs would eventually lead to discrimination between otherwise like products based on PPMs. And developing countries are concerned that this would act as disguised restriction on trade and lead to limited market access for them (Polak 2003).

Uncertainty as to whether NPR PPMs is covered by the TBT Agreement is a result of ambiguity in wordings of Annex 1.1 and 1.2. Both Annex 1.1 and 1.2 use the phrase "product characteristics or their related processes and production methods" in the first sentence, but they do not use the term "related" in the second sentence. For instance, the first sentence of Annex 1.1, which defines technical regulation, uses the phrase "product characteristics or their related processes and

production methods." However, the second sentence merely states "product, process or product method." This appears on its face to exclude PPM based criteria not related to the product itself, and seems to suggest that the TBT Agreement does not apply to NPR PPMs (Condon 2009).

This has led to argument that only product-related PPMs is covered by the TBT Agreement and thus only the product-related eco-labeling scheme would be compatible with the WTO rules (Appleton 2007). However, a more practical interpretation would be that the second sentence is intended to ensure that labeling measures, whether or not it is product-related, are within the scope of the TBT Agreement (UNCTAD/FIELD 2003). Some authors maintain the view that excluding less transparent NPR PPMs would be inefficient (Low et al. 2011). Those who take systematic-teleological approach suggests that the idea of non-inclusion of NPR PPMs within the purview of the TBT Agreement may have been rooted on the misunderstanding that the non-applicability of the TBT Agreement would per se prohibit the use of NPR PPMs criteria. However, because this is not the case, it is suggested that one should in fact advocate the applicability of the TBT Agreement to NPR PPMs in order to ensure discipline and transparency (Vranes 2011). Further, there is a view that non-inclusion of NPR PPMs within the purview of the TBT Agreement would be inconsistent with the list of legitimate objectives in Article 2.2, which includes objectives that could only be achieved by regulating NPR PPMs (Pauwelyn 2012).

The Panel in *U.S.-Tuna II* case seems to have confirmed the inclusion of NPR PPMs in the purview of the TBT Agreement, and its approach seems uncontested. In *U.S.-Tuna II* case, the Panel relied on the Appellate Body's report on *EC-Asbestos* case and determined that the subject matter of a technical regulation may be "confined" to "one of the elements enumerated in the second sentence, including 'labeling requirements'," "as they apply to a product, process or production method." (WTO 2011c, paras. 7.72–7.79). The inclusion of NPR PPMs to standards may be justified based on the same reasoning, even though *U.S.-Tuna II* case dealt with technical regulation. Given this, it may be safe to conclude that labeling requirements based on NPR PPMs is within the purview of the TBT Agreement (Arcuri 2013).

3.4 Challenges of Eco-Labeling Schemes in the Context of TBT Agreement

3.4.1 Voluntary Eco-Labeling May Act as Trade Barriers

One of few important challenges in implementing eco-labeling is that voluntary eco-labeling that does not explicitly differentiate between products on the basis of origin may still incur the risk of *de facto* discrimination under the TBT Agreement. Since products with eco-labeling are identified as environmentally friendly product, the fact that certain products that may be considered "like products" are not able to

earn the same labeling at issue may actually result in *de facto* discrimination in a given market (UNCTAD/FIELD 2003).

Moreover, despite its voluntary nature, voluntary eco-labeling scheme may become similar to those of regulatory measure where eco-labeling plays an important factor in a given market (UNCTAD 1994). And this will possibly restrict market access for some countries. For instance, even if it is voluntary, consumers may prefer to buy only eco-labeled products, and as a result, products without the labeling may face challenges in a given market (Jha et al. 1997; UNCTAD/FIELD 2003). This is true especially where eco-labeled products have significant impact on consumer choices and preferences in a given market for specified product categories. In such cases, voluntary eco-labeling schemes may act as trade barriers despite their voluntary nature.

3.4.2 Private Eco-Labeling as De Facto Market Standards

In the context of the WTO, eco-labeling schemes established and developed by private bodies raise issues since the TBT Agreement only governs government-administered eco-labeling schemes. And it is not defined clearly enough to determine to what extent private eco-labeling schemes should be covered by the TBT Agreement. In general, eco-labeling schemes administered and developed by private bodies are not within the purview of the TBT Agreement. Yet, private eco-labeling schemes do not necessarily preclude the application of the TBT Agreement where there is sufficient government involvement. Put differently, where there is insufficient government character, private eco-labeling schemes generally do not fall under the TBT Agreement. However, it is likely to raise legal challenges under the WTO rules where private eco-labeling schemes have been developed in consultation with government (Vitalis 2002). The problem is the distinction between public eco-labeling and private eco-labeling is not always clear.

Private eco-labeling raises concerns in a way that these eco-labeling schemes have the potential to act as a *de facto* market standard in a given market because consumers are likely to judge other similar products against products that are labeled as environmentally friendly. Many of these schemes fail to reflect the differing circumstances, and only take into account domestic or local conditions and circumstances (UNCTAD/FIELD 2003). Currently, transparency and non-discrimination principles that are governed by the TBT Agreement do not appear to apply to many private voluntary eco-labeling schemes. And it is of general view that eco-labeling schemes administered by government tends to be far more successful as they are more transparent (Horne 2009). Further, government participation in a labeling program increases its credibility and improves long-term viability. For instance, in the U.S. after ENERGY STAR became widely recognized, interest in energy efficiency labeling by the private bodies has significantly diminished (Banerjee and Solomon 2003) Thus, finding an appropriate linkage between government and a private eco-labeling, for instance government involvement in private eco-labeling schemes, could possibly reduce the problems, at least

for the purpose of ensuring the transparency of private eco-labeling schemes that continue to increase significantly (Horne 2009).

4 Legality of Discrimination Between Like Products Under TBT Agreement

4.1 The Concept of "Like Products"

In principle, the WTO rules do not allow for unilateral measures that are more trade-restrictive than necessary. One of the contentious issues regarding eco-labeling scheme is whether eco-labeling based on NPR PPMs may possibly violate non-discrimination principles of WTO. For instance, given the ongoing debate on the determination of likeness, it is uncertain whether NPR PPMs could be considered as a legitimate differentiation criteria between and among products with varying degree of environmental friendliness.

Thus, with respect to eco-labeling, the key question for the purpose of this paper is whether and how a measure associated with NPR PPMs affects the analysis of likeness under the WTO rules. For those who maintain the view that products that differ only in their PPMs are "like products," and thus must be treated equally, a measure distinguishing otherwise like products on the basis of NPR PPMs would be prohibited. The term "like products" is a key concept in the analysis of non-discrimination principle in the GATT 1994 as well as the TBT Agreement, and thus, the question of what constitutes "like products" for the purpose of the TBT Agreement arises.

The concept of "like products" has been discussed and examined in a number of WTO disputes in the past. It is generally accepted that the concept of likeness should be determined on a case-by-case, because it is "a relative one that evokes the image of an accordion" that "stretches and squeezes in different places as different provisions of the WTO Agreement are applied." (WTO 1996a, p. 114) With respect to considering PPMs in the analysis of "like products," discriminating products based on PPMs seemed to have been completely prohibited in the past. However, the WTO jurisprudence has changed in defining "like products" over the years. In early years, the likeness of products was determined simply on the basis of a comparison of their physical characteristics, end-uses in a given market, consumer's tastes and habits, international tariffication for tariff purposes (WTO 1996a, p. 22; 2001, para. 102). The Dispute Settlement Body's (hereinafter "DSB") stance has gradually evolved to finding that products in competitive relationship in a given market are most likely to be "like products" that require non-discriminatory treatment.

In case of a dispute involving "like product" issue under the TBT Agreement, the WTO is likely to seek guidance from previous WTO jurisprudence in determining

the likeness of products.[12] Further, three recent cases, *United States-Measures Affecting the Production and Sale of Clove Cigarettes* (*U.S.-Clove Cigarettes*), *United States-Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Products* (*U.S.-Tuna II*), and *United States-Certain Country of Origin Labeling Requirements* (*U.S.-COOL*), that specifically dealt with the TBT Agreement are considered to have shed some light on to what extent the WTO would interpret like products and non-discrimination principle under the TBT Agreement. Before *U.S.-Clove Cigarettes* case, there was no case that specifically dealt with Article 2.1 of the TBT Agreement, thus it was not clear to what extent these past rulings of WTO disputes should be applied to the interpretation of "like product" in Article 2.1.[13]

4.2 Recent WTO Jurisprudence

After long years of uncertainties and controversies, three important cases, *U.S.-Clove Cigarettes*, *U.S.-Tuna II* and *U.S.-COOL* in WTO have explored the boundaries of the TBT Agreement where the Appellate Body established significant jurisprudence on the interpretation of the TBT Agreement's key principles. Also, these three cases are of particular importance for the potential effects they will have on eco-labeling schemes adopted by WTO member states in efforts to address climate change.

4.2.1 U.S.-Clove Cigarettes Case

The production and sale of clove cigarettes were banned in the U.S. when Family Smoking Prevention and Tobacco Control Act went effective in June 2009. The

[12] "The national treatment obligations of Article 2.1 and Article III: 4 are built around the same core terms, namely, 'like products' and 'treatment no less favourable.' We further note that technical regulations are in principle subject not only to Article 2.1 of the *TBT Agreement*, but also to the national treatment obligation of Article III: 4 of the GATT 1994, as 'laws, regulations and requirements affecting the internal sale, offering for sale, purchase, transportation, distribution or use' of products. The very similar formulation of the provisions, and the overlap in their scope of application in respect of technical regulations, confirm that Article III: 4 of the GATT 1994 is relevant context for the interpretation of the national treatment obligation of Article 2.1 of the *TBT Agreement*. We consider that, in interpreting Article 2.1 of the *TBT Agreement*, a panel should focus on the text of Article 2.1, read in the context of the *TBT Agreement*, including its preamble, and also consider other contextual elements, such as Article III: 4 of the GATT 1994." (WTO 2011b, para. 100).

[13] In *U.S.-Clove Cigarettes* case, the panel stated that "As indicated above, at the time of writing this Report, examining the concept of likeness under Article 2.1 of the *TBT Agreement* remains an issue of first impression, as the only report that has addressed this provision until now. The Panel is therefore tasked with interpreting for the first time the concept of likeness under Article 2.1 of the TBT Agreement." (WTO 2011b, paras. 7.80–7.81).

legislation excluded menthol cigarettes, which are primarily produced in the U.S. Indonesia, where clove cigarettes are primarily produced, challenged the U.S. law as inconsistent with Article 2.1 and 2.2 of the TBT Agreement. The Panel found that the cigarette ban was inconsistent with Article 2.1 of the TBT Agreement. With respect to Article 2.2, the Panel found that the measure was consistent with Article 2.2. Indonesia did not appeal the ruling on Article 2.2. When the U.S. appealed the Panel's ruling that the measure violated Article 2.1, the Appellate Body upheld the Panel's ruling based on different reasons.

In this case, the Appellate Body determined that in order to establish a violation of the national treatment in Article 2.1, (i) the measure at issue must be a technical regulation; (ii) the imported and domestic products at issue must be like products; and (iii) the treatment accorded to imported products must be less favorable than that accorded to like domestic products must be satisfied (WTO 2012b, para. 87). The Panel's finding that a disputed measure is a technical regulation under the TBT Agreement, was not appealed by the U.S. However, the U.S. appealed the Panel's finding that clove and menthol cigarettes are like products. The U.S.'s appeal concerned only the second and third elements.

In determining likeness, the Appellate Body relied on previous WTO jurisprudence on Article III of the GATT 1994 and upheld the Panel's findings of likeness on different reasons.[14] With respect to "less favorable treatment" under the Article 2.1, the Appellate Body stated that although "treatment less favourable" is to be interpreted "in the light of the specific context provided by the TBT Agreement," the WTO jurisprudence in the past by the Appellate Body in the context of Article III:4 of the GATT 1994 may be "instructive in assessing the meaning of 'treatment less favourable,' provided that the specific context in which the term appears in Article 2.1 of the TBT Agreement is taken into account." Thus, one should determine whether the measure at issue "modifies the conditions of competition in the market of the regulating Member to the detriment of the group of imported products vis-à-vis the group of like domestic products" for the purpose of establishing less favorable treatment (WTO 2012b, para. 180). In this case, the Appellate Body concluded that the determination of likeness in Article 2.1 should be a determination about the competitive relationship between the products based on traditional criteria for analyzing "likeness."

Further, the Appellate Body determined that the context and object and purpose of the TBT Agreement suggests that Article 2.1 should not be interpreted as "prohibiting any detrimental impact on competitive opportunities for imports in cases where such detrimental impact on imports stems exclusively from legitimate regulatory distinctions." According to the Appellate Body, although Article 2.1 prohibits both *de jure* and *de facto* discrimination against imported products, it still permits "detrimental impact on competitive opportunities for imports that stems exclusively from legitimate regulatory distinctions." (WTO 2012b, paras. 174;

[14] The Panel found that the concept of "like products" in Article 2.1 should be based on the regulatory purpose of the technical regulation at issue (WTO 2011b, paras. 7.91–7.117).

180–182) Put differently, the Appellate Body determined that mere existence of a detrimental impact on competitive opportunities for imports is not sufficient to establish a violation of Article 2.1.

With respect to establishing whether such detrimental impact on imports stems exclusively from legitimate regulatory distinctions, the Appellate Body determined that where the measure at issue does not "*de jure* discriminate against imports," "the particular circumstances of the case, that is, the design, architecture, revealing structure, operation, and application of the technical regulation at issue, and, in particular, whether that technical regulation is even-handed" should be scrutinized (WTO 2012b, para. 215). Consequently, the Appellate Body found that the U.S. violated the Article 2.1 of the TBT Agreement (WTO 2012b, paras. 215; 224–226).

4.2.2 U.S.-Tuna II Case

U.S.-Tuna II case explores the relationship between a member state's environment protection and trade liberalization and clarifies key provisions of the TBT Agreement. In April of 2009, Mexico filed a complaint against the U.S. before the WTO panel based on the grounds that United States' conditions for "dolphin-safe" labeling were "discriminatory and unnecessary," and that these conditions violated Articles 2.1, 2.2 and 2.4 of the TBT Agreement. With respect to Article 2.1 the Panel rejected Mexico's claims that U.S. labeling measures discriminated against tuna products from Mexico. At the same time, the Panel sided with Mexico that the dolphin-safe labeling measures of the U.S. were more trade restrictive than necessary to achieve their objectives, thus contrary to Article 2.2. Both parties appealed the panel report.[15]

In this case, the Appellate Body agreed with the Panel that the U.S.'s measure is a technical regulation. The U.S. contended that where producers retain the option of not using the label but still are able to sell the product on the market, compliance with a labeling requirement is not mandatory. However, the Appellate Body concluded because the measure at issue imposes legally enforceable conditions by requiring producers of tuna products to comply with the measure in order to make "dolphin safe" claim, it constitutes technical regulation within the meaning of Annex 1.1 (WTO 2012c, paras. 196–199). The Panel's finding that the products at issue were like products was not appealed by the U.S. (WTO 2012c, paras. 230–231)

As regards Article 2.1 of the TBT Agreement, the Appellate Body found that the U.S. measure, although it is origin neutral on the face, may nevertheless modify the conditions of the competition in the U.S. market to the detriment of Mexican tuna

[15] The Panel further ruled in favor of the U.S. concluding that the dolphin-safe labeling was not in violation of Article 2.4, which requires "technical regulations to be based on relevant international standards where possible."

products (WTO 2012c, para. 225). The Appellate Body determined that the measure at issue did harm the competitive opportunities for Mexican tuna products because Mexican tuna products were not able to earn the "dolphin-safe" label. The Appellate Body also reviewed whether the U.S. measure was the result of legitimate regulatory distinctions. The Appellate Body determined that the different treatment resulting from the measure, where labeling requirements were stricter for tuna caught within the ETP than outside it, were not proportionally calibrated, and thus the U.S. measure was not found to be stemming from legitimate regulatory distinctions. Consequently, the U.S. measure was found to provide less favorable treatment to Mexican tuna products in violation of Article 2.1 (WTO 2012c, paras. 297–299).

The Appellate Body also reversed the Panel's ruling that the U.S.'s measure is more trade-restrictive than necessary to meet a legitimate objective. In assessing the necessity of the measure at issue, the Appellate Body carefully analyzed the following; (1) the degree of contribution made by the measure to the legitimate objective at issue; (2) the trade-restrictiveness of the measure; and (3) the nature of the risks at issue and the gravity of consequences that would arise from non-fulfillment of the objective(s) pursued by the Member through the measure (WTO 2012c, paras. 318–322). The Appellate Body found that an alternative measure used in conjunction with the AIDCP (Agreement on International Dolphin Conservation Program) scheme that provides for a less stringent labeling scheme would not achieve the U.S. objective to the same extent as the U.S. measure at issue alone. Consequently, the Appellate Body found that the U.S. measure did not violate Article 2.2.

4.2.3 U.S.-COOL Case

In this case, the U.S. country of origin labeling scheme, also known as the COOL measure, was challenged by Canada and Mexico under the TBT Agreement. The so-called COOL measure required muscle cut meats to be labeled in one of four ways,[16] the objective of which was to provide consumers with more information about the origins of the meat products. The Panel found the COOL measure was in violation of both Article 2.1 and 2.2. (WTO 2011a, paras. 7.548, 7.720). The U.S. appealed the Panel's ruling on Articles 2.1 and 2.2.

In this case, the COOL measure was found to be technical regulation, and the products concerned (cattle with different origins) were like products (WTO 2011a, para. 7.256). The Appellate Body upheld the Panel's ruling that the U.S. measure violated Article 2.1. Basically, the Appellate Body based its finding on emphasizing

[16] Label A: meat that is born, raised, and slaughtered in the U.S.; Label B: meat with multiple countries of origins (born in Mexico or Canada, but slaughtered in the U.S.); Label C: meat from animals not born or raised in the U.S. but imported to the U.S. for immediate slaughter; Label D: meat from animals neither born, raised, nor slaughtered in the U.S. (WTO 2011a, para. 7.89).

the competitive relationship between products subject to the measure at issue (Layton et al. 2012). The Appellate Body determined that although the COOL measure does not explicitly require segregation, it "creates an incentive for US producers to segregate livestock according to origin, in particular by processing exclusively US-origin livestock." The Appellate Body further determined that "a market's response to the application of a governmental measure is always relevant to an assessment of whether the operation of that measure accords *de facto* less favourable treatment to imported products." It was concluded that if a certain measure adopted by a member state "gives rise to adverse effects in the market, which disparately impact imported products, such effects will be attributable to the technical regulation for purposes of examining less favourable treatment under Article 2.1." (WTO 2012a, para. 289)

Once the Appellate Body found that the measure had a detrimental effect on imported products, it went on to complete the analysis by examining whether there was a "legitimate regulatory distinction" or whether the measure "lacks even-handedness" because it is "designed or applied in a manner that constitutes a means of arbitrary or unjustifiable discrimination." (WTO 2012a, paras. 341, 349) In this case, the Appellate Body found that "the informational requirements imposed on upstream producers under the COOL measure are disproportionate as compared to the level of information communicated to consumers through the mandatory retail labels." (WTO 2012a, para. 347) Given that relying exclusively on domestic livestock was the least costly way of complying with the COOL measure, the informational requirements necessitated the segregation and thus had a detrimental impact on the competitive opportunities of imported livestock (WTO 2012a, para. 349). Moreover, the information requirements imposed on upstream producers could not be explained by the need to provide consumers with information regarding the countries of origin for livestock, because most of the information that was to be provided to consumers did not reach the labels prescribed under the COOL measure, that consumers actually see. Consequently, the Appellate Body concluded that the detrimental impact on imported products reflected discrimination in violation of Article 2.1 and did not stem exclusively from a legitimate regulatory distinction (WTO 2012a, paras. 347–350).

With respect to Article 2.2, the Appellate Body reversed the Panel's finding that the U.S. measure violated Article 2.2. The Appellate Body reiterated the three-prong test used in *U.S.-Tuna II* case.[17] The Panel found that the objective of COOL measure legitimate, which was to provide consumers with information on the countries in which the livestock from which the meat they purchase is produced were born, raised and slaughtered. The Appellate Body simply upheld the Panel's

[17] As to whether the Panel erred in finding the trade-restrictiveness of COOL measure, the U.S. made it clear the Panel's finding of violation for the COOL measure for the purpose of Article 2.2 must be reversed once that Article 2.1 is reversed, because the Panel relied on its finding on Article 2.1 to conclude that the COOL measure is trade restrictive for the purpose of Article 2.2. The issue was not further considered as the Appellate Body upheld the Panel's finding on the issue (WTO 2012a, para. 381).

finding based on the complainant's failure to meet their burden of proof (WTO 2012a, paras. 318, 322, 453). Whereas the Panel found that the U.S. measure did not fulfill enough of its objective, the Appellate Body determined that any contribution was sufficient to fulfill its legitimate objective, that assessment should focus on "ascertaining the degree of contribution achieved by the measure, rather than on answering the questions of whether the measure fulfils the objective completely or satisfies some minimum level of fulfilment of that objective." (WTO 2012a, paras. 373, 469) With respect to other proposed alternative labeling schemes, the Panel did not make factual findings because it did not consider it necessary to examine whether the COOL measure is more trade-restrictive than necessary as "less trade-restrictive alternative measures that can equally fulfil the identified objective" were available (WTO 2011a, para. 7.719). Consequently, the Appellate Body concluded that it was unable to complete the analysis due to the lack of sufficient factual findings by the Panel (WTO 2012a, paras. 480–481).

5 Conclusion: Implications for Potential Eco-Labeling Disputes

With the growing concern over climate change, labeling schemes have been established and developed across the world. Many agree that eco-labeling schemes are potentially effective instrument to inform consumers about environmental friendliness of products. Despite this favorable view, the eco-labeling issue has remained and continues to be contentious because it is likely to give rise to disputes in the context of the WTO. This is because eco-labeling schemes are likely to modify the market conditions in international trade, limiting market access for some countries, especially developing countries.

Eco-labeling, mandatory or voluntary, despite their legitimate objective of environmental protection, is likely to raise issues in the WTO. The TBT Agreement, which contains rules potentially applicable to eco-labeling, is most likely to come into play when it comes to the discussion of eco-labeling in the WTO. Eco-labeling schemes may violate the TBT Agreement for being less favorable to imported like products or more trade-restrictive than necessary to protect environment, even if its objective is legitimate. Should a dispute arise under the TBT Agreement with respect to eco-labeling scheme, the aforementioned three cases, *U.S.-Clove Cigarettes* case, *U.S.-Tuna II* case and *U.S.-COOL* cases will provide needed context for the interpretation. Before these three cases, the WTO jurisprudence on the TBT Agreement was scant. These three cases are of particular importance for they considered to have provided a needed context for interpreting the key principles of TBT Agreement. They are also important because of their implications for potential WTO disputes associated with eco-labeling in the future.

In determining whether the eco-labeling schemes treat imported like products less favorably, the DSB will first look into whether the products subject to the

schemes are considered "like products" under the TBT Agreement, prior to determining whether imported products were treated less favorably than domestic like products. As noted earlier, the DSB has continued to rely on previous WTO jurisprudence on Article III of GATT 1994 in determining likeness of products at issue. The concept of "likeness" is most likely to be interpreted in the context of the TBT Agreement and of Article III of the GATT 1994, which also contains national treatment obligation that is similarly worded (WTO 2012b, para. 120). For instance, in *U.S.-Clove Cigarettes* case, the Panel decided the determination of like products in Article 2.1 of the TBT Agreement should be based on the regulatory purpose of measure in dispute (WTO 2011b, paras. 7.91–7.117). However, the Appellate Body concluded that the determination of likeness in Article 2.1 of the TBT Agreement should be a determination about the competitive relationship between the products based on traditional criteria for analyzing "likeness." (WTO 2012b, para. 180).

In determining the "likeness" of products, there is "no one approach that will be appropriate for all cases." (WTO 1996a, p. 114) Panels and the Appellate Body in the past have followed a traditional approach outlining four general criteria when determining "likeness"; (1) the properties, nature and quality of the products; (2) the end-uses of the products; (3) consumers' tastes and habits—more comprehensively termed consumers' perceptions and behavior—in respect of the products; and (4) the tariff classification of the products (WTO 2001, para. 101). Although each element is examined separately and addresses a different aspect of the products, these different elements are interrelated. For instance, the physical properties of a product could shape and limit the end-uses of a product, and consumer perceptions may influence traditional uses of a product (WTO 2001, para. 102).

The determination of likeness in the TBT Agreement as well as Article III of the GATT 1994 is a "determination about the nature and extent of a competitive relationship between and among the products at issue." (WTO 2001, para. 120) It seems there was a general consensus until recently that a NPR PPMs cannot possibly make otherwise like products "unlike," and whenever trade is restricted based on such PPMs it would directly lead to a violation of national treatment. However, it seems to have evolved gradually to opening possibility to justify distinguishing products based on NPR PPMs. Given that the four criteria adopted by the panels and the Appellate Body in the determination of likeness is of non-exhaustive character,[18] this may also suggest that the meaning of "likeness" may be adaptable to the changes in the understanding of the WTO regime (Potts 2008).

In *U.S.-Tuna II* case, the Appellate Body seemed to have effectively characterized a measure based on a NPR PPMs as discriminatory by finding that the U.S.'s measure is inconsistent with Article 2.1 of the TBT Agreement (Trujillo 2012). After *U.S.-Tuna II* case, some critics have expressed concerns that the WTO rules are used to challenge regulatory actions that are intended to protect the environment

[18] Originally, the Report on Border Tax Adjustment only provided the first three criteria. The fourth criterion was added by the Panel in *U.S.-Reformulated Gas* case (WTO 1996b, para. 3.22).

(Strawbridge 2013). Yet, the extent to which consumers perceive may also influence the determination of likeness. In the previous WTO jurisprudence, the Appellate Body found that consumer's perception could play a very significant role in the determination of likeness. When it comes to eco-labeling schemes based on NPR PPMs, NPR PPMs may be a significant element in determining likeness as consumers may perceive NPR PPMs as being product-related. And this will consequently affect the competitive relationship between and among the products in a given market. In this sense, if NPR PPMs can actually affect a competitive relationship between imported products and domestic products in a given market, it is likely to affect the analysis of likeness. Put differently, if consumers perceive two products to be different given the way they were produced and processed, consumer perception on NPR PPMs may constitute an indication that these products do not compete in the same market and the products may not be "like (Vranes 2011)."

Although regulatory concerns and considerations underlying certain measures are not determinative element in the determination of likeness, they may also play a role to the extent that they are relevant to the examination of "likeness" criteria and are reflected in the products' competitive relationship (WTO 2012b, paras. 117, 120). In this respect, it may be safe to conclude that there is a possibility that NPR PPMs could be considered as legitimate differentiation criterion between and among products with varying degree of environmental friendliness, and thus otherwise like products may be considered "unlike" based on consumer perception.

The Appellate Body found the disputed measures in violation of Article 2.1 in all three aforementioned cases. In these three cases, the Appellate Body based its finding on whether there is a less favorable treatment to imported products by determining whether the measure at issue would modify the conditions of competition between imported products and domestic like products in a given market. Once it was found that there was a detrimental impact on imported products, the Appellate Body went on to determine whether a detrimental impact on imported products stems from its legitimate regulatory distinction or lacks even-handedness (WTO 2012a, paras. 341, 349). In determining whether a disputed measure violated Article 2.1, the Appellate Body seems to have added the "legitimate regulatory distinction test" to see whether the measure is designed or applied in arbitrary or unjustifiable manner.[19]

Whereas the disputed measures were found to be in violation of Article 2.1 in all three cases, the disputed measures were found to be consistent with Article 2.2 in all cases. With respect to Article 2.2, it was made clear that a measure would have to be scrutinized for another necessity test to establish it does not create unnecessary obstacles to international trade. Put differently, even if a measure does not incur discriminatory effects, it would still have be proved that it is no more trade

[19] Some academic writings maintain the view that by adding the test of legitimate regulatory distinction, the Appellate Body has effectively added an "exception provision" similar to that of Article XX of the GATT 1994 to the TBT Agreement (Carlone 2014; Shaffer 2013).

restrictive than necessary to fulfill a legitimate objective. When it comes to fulfilling a legitimate objective, the Appellate Body has made it clear the measure need not fulfill the objective completely or satisfy a certain level in order to fulfill the objective, and any contribution would be sufficient to fulfill its legitimate objective (WTO 2012a, paras. 373, 469).

The Appellate Body's conclusion with respect to Article 2.2 probably indicates the difficulty in demonstrating necessity for a disputed measure under Article 2.2. The Appellate Body's current jurisprudence, its unwillingness to find violation under Article 2.2 of the TBT Agreement, may be viewed as its deference to regulatory authority of the WTO members since ruling otherwise could limit the regulatory authority of the WTO members in implementing domestic measures designed to protect objectives such as protection of environment.[20]

In future disputes concerning eco-labeling schemes, the DSB is likely to continue to show deference to WTO member's regulatory authority. The DSB may be hesitant to find the measure in violation of Article 2.2 for being more trade restrictive than necessary, as it is safer to find violations of non-discrimination principle that is recognized as the very core principle of the WTO (Carlone 2014). Although all three aforementioned cases dealt with technical regulations, as noted earlier, the same reasoning can be equally applied to the case of standards. Thus, the key to a WTO-compatible eco-labeling scheme would be to establish that a measure at issue does not modify the conditions of competitive relationship between imported products and domestic like products, and that it is the least-trade restrictive necessary to contribute to fulfillment of a legitimate objective.

References

Appleton A (2007) Supermarket labels and the TBT agreement: mind the gap. Bus Law Brief 4 (1):10–14

Arcuri A (2013) The TBT agreement and private standards. In: Epps T, Trebilcock M (eds) Research handbook on the WTO and technical barriers to trade. Edward Elgar, Cheltenham, UK & Northampton, MA, USA

Banerjee A, Solomon B (2003) Eco-labeling for energy efficiency and sustainability: a meta-evaluation of US programs. Energy Policy 31:109–123

Carbonfund.org (n.d.) Reduce your product's carbon footprint with Carbonfree® Certification. http://www.carbonfund.org/offset/product-certification. Accessed 30 July 2014

Carlone J (2014) An added exception to the TBT agreement after Clove, Tuna II, and COOL. BC Int Comp Law Rev 37(1):103–138

Condon B (2009) Climate change and unresolved issues in WTO law. Paper presented at International Conference on the Future of the WTO. Asian Center for WTO & International Health Law and Policy, National Taiwan University, Taiwan, 24 May 2009

Du M (2007) Domestic regulatory autonomy under the TBT agreement: from non-discrimination to harmonization. Chin J Int Law 6(2):269–306

[20] There are also criticisms that the Appellate Body relied too much on Article 2.1 in order to avoid finding violation under Article 2.2 (Carlone 2014; Pauwelyn 2012).

Ecolabel Index (n.d.) Timberland Green Index. http://www.ecolabelindex.com/ecolabel/TimberlandGreenIndex. Accessed 2 Aug 2014

Energy Star (n.d.) About Energy Star. http://www.energystar.gov/about/. Accessed 15 July 2014

U.S. Environmental Protection Agency (2014) U.S. inventory of U.S. greenhouse gas emissions and sinks: 1990–2012. U.S. Environmental Protection Agency, Washington, DC

Home Depot (n.d.) The Eco Options Program. http://www.ecooptions.homedepot.com/. Accessed 2 Aug 2014

Horne R (2009) Limits to labels: the role of eco-labels in the assessment of product sustainability and routes to sustainable consumption. Int J Consum Stud 33:175–182

Jha V, Vossenaar R, Zarrilli S (1997) Eco-labelling and international trade. Macmillan Press, London

Kloeckner J (2012) The power of eco-labels: communicating climate change in the United States using Carbon Footprint Labels consistent with international trade regimes under the WTO. Paper presented at International Conference on Culture, Politics and Climate Change, University of Colorado Boulder, Boulder, 13–15 Sep 2012

Layton D, Schueren P, Sales S (2012) WTO appellate body brings coherence to trade rules on technical regulation. In: Legal update. Mayer Brown. http://www.mayerbrown.com/WTO-Appellate-Body-Brings-Coherence-to-Trade-Rules-on-Technical-Regulations-07-09-2012/. Accessed 24 July 2014

Low P, Marceau G, Reinaud J (2011) The interface between the trade and climate change regimes: scoping the issues. Staff Working Paper of WTO Economic Research and Statistics Division, Dec 2011

Marceau G, Trachtman J (2006) A map of the World Trade Organization law of domestic regulation of goods: the technical barriers to trade agreement, the sanitary phytosanitary and the general agreement on tariffs and trade. In: Bermann G, Mavroidis P (eds) Trade and human health and safety, 1st edn. Cambridge University Press, New York, pp 9–76

Pauwelyn J (2012) COOL. . .But What is Left Now for TBT Article 2.2? http://worldtradelaw.typepad.com/ielpblog/2012/07/cool-but-what-is-left-now-of-tbt-art-22.html. Accessed 28 July 2014

Polak J (2003) Trade as an environmental policy tool? GEN, ecolabeling and trade. Paper presented at World Trade Organization Public Symposium Challenges Agreed on the Road to Cancun, 16–18 June 2003

Potts J (2008) The legality of PPMs under the GATT: challenges and opportunities for sustainable trade policy. International Institute for Sustainable Development. Available at http://www.iisd.org/pdf/2007/ppms_gatt.pdf. Accessed 2 Aug 2014

Shaffer G (2013) United States – measures concerning the importation, marketing and sale of Tuna and Tuna products. Am J Int Law 107:192–199

Strawbridge J (2013) U.S. implementation of adverse WTO rulings: a closer look at the Tuna-Dolphin, COOL, and Clove Cigarettes Cases. ASIL Insights 17(23). https://www.asil.org/insights/volume/17/issue/23/us-implementation-adverse-wto-rulings-closer-look-tuna-dolphin-cool-and. Accessed 12 April 2016

Syunkova A (2007) WTO-compatibility of four categories of U.S. climate change policy. National Foreign Trade Council, Washington. www.nftc.org. Accessed 18 July 2014

Trujillo E (2012) The WTO appellate body knocks down U.S. "Dolphin-Safe" Tuna labels but leaves a crack for PPMs. ASIL Insights 16(25). https://www.asil.org/sites/default/files/insight120726.pdf. Accessed 12 April 2016

United Nations Conference on Trade and Development (1994) Eco-labeling and market opportunities for environmentally friendly products. TD/B/WG.6/2, Geneva

United Nations Conference on Trade and Development, Foundation for International Environmental Law and Development (2003) Legal and policy issues in the market access implications of labeling for environmental purposes. Sub-regional brainstorming workshop on the specific trade and environment issues in Paragraph 31 and 32 of the Doha Ministerial Declaration in preparation for the Cancun WTO Ministerial Conference, Bangkok, 30 July–1 August 2003

Vitalis V (2002) Private voluntary eco-labels: trade distorting, discriminatory and environmentally disappointing. The 9th Round Table on Sustainable Development, OECD, 6 Dec 2002
Vranes E (2011) Climate labeling and the WTO: the 2010 EU eco-labeling programme as a test case under WTO law. In: Hermann C, Terhechte J (eds) European yearbook of international economic law, vol 2. Springer, Heidelberg, pp 205–237
World Trade Organization (1996a) Japan – taxes on alcoholic beverages, appellate body report, WT/DS10/AB/R, WT/DS11/AB/R, Geneva
World Trade Organization (1996b) United States – standards for reformulated and conventional gasoline, report of the panel, WT/DS2/R, Geneva
World Trade Organization (2001) European communities - measures affecting asbestos and products containing asbestos, appellate body report, WT/DS135/AB/R, Geneva
World Trade Organization (2011a) United States – certain country of origin labeling requirements. Report of the panel, WT/DS384/R; WT/DS386/R, Geneva
World Trade Organization (2011b) United States – measures affecting the production and sale of Clove Cigarettes report of the panel, WT/DS406/R, Geneva
World Trade Organization (2011c) United States - measures concerning the importation, marketing and sale of Tuna and Tuna Products. Report of the panel, WT/DS381/R, Geneva
World Trade Organization (2012a) United States – certain country of origin labeling requirements, appellate body report, WT/DS384/AB/R; WT/DS386/AB/R, Geneva
World Trade Organization (2012b) United States – measures affecting the production and sale of Clove Cigarette appellate body report, WT/DS406/AB/R, Geneva
World Trade Organization (2012c) Measures concerning the importation, marketing and sale of Tuna and Tuna products appellate body report, WT/DS381/AB, Geneva
World Trade Organization (n.d.) Environment: issues- labelling. https://www.wto.org/english/tratop_e/envir_e/labelling_e.htm. Accessed 15 July 2014
Zhang ZX, Assuncao L (2002) Domestic climate policies and the WTO. UNCTAD Discussion Paper, vol 164

The U.S. Proposed Carbon Tariffs, WTO Scrutiny and China's Responses

ZhongXiang Zhang

1 Introduction

There is a growing consensus that climate change has the potential to seriously damage our natural environment and affect the global economy, thus representing the world's most pressing long-term threat to future prosperity and security. With greenhouse gas emissions embodied in virtually all products produced and traded in every conceivable economic sector, effectively addressing climate change will require a fundamental transformation of our economy and the ways that energy is produced and used. This will certainly have a bearing on world trade as it will affect the cost of production of traded products and therefore their competitive positions in the world market. This climate-trade nexus has become the focus of an academic debate (e.g., Bhagwati and Mavroidis 2007; Charnovitz 2003; Ismer and Neuhoff 2007; Swedish National Board of Trade 2004; World Bank 2007; Zhang 1998b, 2004, 2007a; Zhang and Assunção 2004), and gains increasing attention as governments are taking great efforts to implement the Kyoto Protocol and forge a post-2012 climate change regime to succeed it.

The Intergovernmental Panel on Climate Change (IPCC) calls for developed countries to cut their greenhouse gas emissions by 25–40 % by 2020 and by 80 % by 2050 relative to their 1990 levels, in order to avoid dangerous climate change impacts. In the meantime, under the United Nations Framework Convention on Climate Change (UNFCCC) principle of "common but differentiated responsibilities," developing countries are allowed to move at different speeds relative to their developed counterparts. This principle is clearly reflected in the Bali roadmap, which requires developing countries to take "nationally appropriate mitigation

Z. Zhang (✉)
College of Management and Economics, Tianjin University, 92 Weijin Road, Tianjin 300072, China
e-mail: ZhangZX@tju.edu.cn

D.-Y. Park (ed.), *Legal Issues on Climate Change and International Trade Law*,
DOI 10.1007/978-3-319-29322-6_3

actions ... in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner." Understandably, the U.S. and other industrialized countries would like to see developing countries, in particular large developing economies, go beyond that because of concerns about their own competitiveness and growing greenhouse gas emissions in developing countries (Zhang 2012b). They are considering unilateral trade measures to "induce" developing countries to do so. This has been the case in the course of debating and voting on the U.S. congressional climate bills capping U.S. greenhouse gas emissions. U.S. legislators have pushed for major emerging economies, such as China and India, to take climate actions comparable to that of U.S. If they do not, products sold on the U.S. market from these major developing countries will have to purchase and surrender emissions allowances to cover their carbon contents. These kinds of border carbon adjustment measures have raised great concerns about whether they are WTO-consistent and garnered heavy criticism from developing countries.

To date, border adjustment measures in the form of emissions allowance requirements (EAR) under the U.S. proposed cap-and-trade regime are the most concrete unilateral trade measure put forward to level the carbon playing field. If improperly implemented, such measures could disturb the world trade order and trigger a trade war. Because of these potentially far-reaching impacts, this paper will focus on this type of unilateral border adjustment. It requires importers to acquire and surrender emissions allowances corresponding to the embedded carbon contents in their goods from countries that have not taken climate actions comparable to that of the importing country. My discussion is mainly on the legality of unilateral EAR under the WTO rules (see Box 1).[1] Section 2 briefly describes the border carbon adjustment measures proposed in the U.S. legislations. Section 3 deals with the WTO scrutiny of EAR proposed in the U.S. congressional climate bills, the effectiveness of an EAR in leveraging China to change behavior and methodological challenges in implementing EAR. With current international climate negotiations flawed with a focus on commitments on the two targeted dates of 2020 and 2050, the inclusion of border carbon adjustment measures seems essential to secure passage of any U.S. climate legislation. Given this, Sect. 4 discuses how China should respond to the U.S. proposed carbon tariffs. The paper ends with some concluding remarks on the needs, on the U.S. side, to minimize the potential conflicts with WTO provisions in designing such border carbon adjustment measures, and with suggestion for China, as the target of such border measures to effectively deal with the proposed border adjustment measures to its advantage.

[1] See Reinaud (2008) for a review of practical issues involved in implementing unilateral EAR.

2 Proposed Border Adjustment Measures in the U.S. Climate Legislations

The notion of border carbon adjustments (BCA) is not an American invention. The idea of using BCA to address the competitiveness concerns as a result of differing climate policy was first floated in the EU, in response to the U.S. withdrawal from the Kyoto Protocol. Dominique de Villepin, the then French prime minister, proposed in November 2006 for carbon tariffs on goods from countries that had not ratified the Kyoto Protocol. He clearly had the U.S. in mind when contemplating such proposals aimed to bring the U.S. back to the table for climate negotiations. However, Peter Mandelson, the then EU trade commissioner, dismissed the French proposal as not only a probable breach of trade rules but also "not good politics" (Bounds 2006). As a balanced reflection of the divergent views on this issue, the European Commission has suggested that it could implement a "carbon equalization system . . . with a view to putting EU and non-EU producers on a comparable footing." "Such a system could apply to importers of goods requirements similar to those applicable to installations within the European Union, by requiring the surrender of allowances" (European Commission 2008). In light of this, various proposals about carbon equalization systems at the border have been put forward, the most recent linked to French president Nicolas Sarkozy's proposal for "a carbon tax at the borders of Europe." President Sarkozy renewed such a call for a European carbon tax on imports when unveiling the details of France's controversial national carbon tax of €17 per ton of CO_2 emissions. He defended his position by citing comments from the WTO that such a tax could be compatible with its rules and referring to a similar border carbon adjustment provision under the Waxman-Markey bill in the U.S. House to be discussed in the next two sections, arguing that "I don't see why the US can do it and Europe cannot" (Hollinger 2009) "not to do so would amount to "massive aid to relocations" (*The Economist* 2009). So far, while the EU has considered the possibility of imposing a border allowance adjustment should serious leakage issues arise in the future, it has put this option on hold. The European Commission has proposed using temporary free allocations to address competitiveness concerns in the interim. Its aim is to facilitate a post-2012 climate negotiation while keeping that option in the background as a last resort.

Interestingly, the U.S. legislators have not only embraced such BCA measures that they opposed in the past, but have also focused on their design issues in more details. In the U.S. Senate, the Boxer Substitute of the Lieberman-Warner Climate Security Act (S. 3036) mandates that starting from 2014 importers of products covered by the cap-and-trade scheme would have to purchase emissions allowances from an International Reserve Allowance Program if no comparable climate action were taken in the exporting country. Least developed countries and countries that emit less than 0.5 % of global greenhouse gas emissions (i.e., those not considered significant emitters) would be excluded from the scheme. Given that most carbon-intensive industries in the U.S. run a substantial trade deficit (Houser et al. 2008),

this proposed EAR clearly aims to level the carbon playing field for domestic producers and importers. In the U.S. House of Representatives, the American Clean Energy and Security Act of 2009 (H.R. 2998), sponsored by Reps. Henry Waxman (D-CA) and Edward Markey (D-MA), was narrowly passed on 26 June 2009. The so-called Waxman-Markey bill sets up an "International Reserve Allowance Program" whereby U.S. importers of primary emission-intensive products from countries having not taken "greenhouse gas compliance obligations commensurate with those that would apply in the United States" would be required to acquire and surrender carbon emissions allowances. The EU by any definition would pass this comparability test, because it has taken under the Kyoto Protocol and is going to take in its follow-up regime much more ambitious climate targets than U.S. Because all other remaining Annex 1 countries but the U.S. have accepted mandatory emissions targets under the Kyoto Protocol, these countries would likely pass the comparability test as well, which exempts them from EAR under the U.S. cap-and-trade regime. While France targeted the American goods, the U.S. EAR clearly targets major emerging economies, such as China and India.

3 The WTO Consistency, the Effectiveness and Methodological Challenges of Border Carbon Adjustment Measures

3.1 WTO Scrutiny of U.S. Congressional Climate Bills

The import emissions allowance requirement was a key part of the Lieberman-Warner Climate Security Act of 2008, and will re-appear again as the U.S. lawmakers debate and vote any climate change bill in the future. Moreover, concerns raised in the Lieberman-Warner bill seem to have provided references to writing relevant provisions in the Waxman-Markey bill to deal with the competitiveness concerns. For these reasons, I start with the Lieberman-Warner bill.

A proposal first introduced by the International Brotherhood of Electrical Workers (IBEW) and American Electric Power (AEP) in early 2007 would require importers to acquire emission allowances to cover the carbon content of certain products from countries that do not take climate actions comparable to that of the U.S. (Morris and Hill 2007). The original version of the Lieberman-Warner bill incorporated this mechanism, threatening to punish energy-intensive imports from developing countries by requiring importers to obtain emission allowance, but only if they had not taken comparable actions by 2020, 8 years after the effective start date of a U.S. cap-and-trade regime begins. It was argued that the inclusion of trade provisions would give the U.S. additional diplomatic leverage to negotiate multilaterally and bilaterally with other countries on comparable climate actions. Should such negotiations not succeed, trade provisions would provide a means of leveling the carbon playing field between American energy-intensive manufacturers and

their competitors in countries not taking comparable climate actions. Not only would the bill have imposed an import allowance purchase requirement too quickly, it would have also dramatically expanded the scope of punishment: almost any manufactured product would potentially have qualified. If strictly implemented, such a provision would pose an insurmountable hurdle for developing countries (*The Economist* 2008).

It should be emphasized that the aim of including trade provisions is to facilitate negotiations while keeping open the possibility of invoking trade measures as a last resort. The latest version of the Lieberman-Warner bill had brought the deadline forward to 2014 to gain business and union backing.[2] The inclusion of trade provisions might be considered the "price" of passage for any U.S. legislation capping its greenhouse gas emissions. Put another way, it is likely that no climate legislation can move through U.S. Congress without including some sort of trade provisions. An important issue on the table is the length of the grace period to be granted to developing countries. While many factors need to be taken into consideration (Haverkamp 2008), further bringing forward the imposition of allowance requirements to imports is rather unrealistic, given the already very short grace period ending 2019 in the original version of the bill. It should be noted that the Montreal Protocol on Substances that Deplete the Ozone Layer grants developing countries a grace period of 10 years (Zhang 2000). Given that the scope of economic activities affected by a climate regime is several orders of magnitude larger than those covered by the Montreal Protocol, if legislation incorporates border adjustment measures (put the issue of their WTO consistency aside), in my view, they should not be invoked for at least 10 years after mandatory U.S. emission targets take effect.

Moreover, unrealistically shortening the grace period granted before resorting to the trade provisions would increase the uncertainty of whether the measure would withstand a challenge by U.S. trading partners before the WTO. As the ruling in the Shrimp-Turtle dispute indicates (see Box 2), for a trade measure to be considered WTO-consistent, a period of good-faith efforts to reach agreements among the countries concerned is needed before imposing such trade measures. Put another way, trade provisions should be preceded by major efforts to negotiate with partners within a reasonable timeframe. Furthermore, developing countries need a reasonable length of time to develop and operate national climate policies and measures. Take the establishment of an emissions trading scheme as a case in point. Even for the U.S. SO_2 Allowance Trading Program, the entire process from the U.S. Environmental Protection Agency beginning to compile the data for its allocation database in 1989 to publishing its final allowance allocations in March 1993 took almost 4 years. For the first phase of the EU Emissions Trading Scheme, the entire process took almost 2 years from the EU publishing the Directive

[2] This is in line with the IBEW/AEP proposal, which requires U.S. importers to submit allowances to cover the emissions produced during the manufacturing of those goods 2 years after U.S. starts its cap-and-trade program (McBroom 2008).

establishing a scheme for greenhouse gas emission allowance trading on 23 July 2003 to it approving the last national allocation plan for Greece on 20 June 2005. For developing countries with very weak environmental institutions and that do not have dependable data on emissions, fuel uses and outputs for installations, this allocation process is expected to take much longer than what experienced in the U.S. and the EU (Zhang 2007b).

Box 1 Core WTO Principles

GATT Article 1 ('most favored nation' treatment): WTO members not allowed to discriminate against like imported products from other WTO members

GATT Article III ('national treatment'): Domestic and like imported products treated identically, including any internal taxes and regulations

GATT Article XI ('elimination of quantitative restrictions'): Forbids any restrictions (on other WTO members) in the form of bans, quotas or licenses

GATT Article XX

"Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be constructed to prevent the adoption or enforcement by any contracting party of measures. . .

(b) **necessary** to protect human, animal or plant life or health; . . .

(g) **relating to** the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption; . . ."

The **threshold for (b) is higher than for (g)**, because, in order to fall under (b), the measure must be "necessary", rather than merely "relating to" under (g).

Box 2 Implications of the Findings of the WTO Shrimp-Turtle Dispute

To address the decline of sea turtles around the world, in 1989 the U.S. Congress enacted Section 609 of Public Law 101–162 to authorize embargoes on shrimp harvested with commercial fishing technology harmful to sea turtles. The U.S. was challenged in the WTO by India, Malaysia, Pakistan and Thailand in October 1996, after embargoes were leveled against them. The four governments challenged this measure, asserting that the U.S. could not apply its laws to foreign process and production methods. A WTO Dispute Settlement Panel was established in April 1997 to hear the case. The Panel found that the U.S. failed to approach the complainant

(continued)

nations in serious multilateral negotiations before enforcing the U.S. law against those nations. The Panel held that the U.S. shrimp embargo was a class of measures of processes-and-production-methods type and had a serious threat to the multilateral trading system because it conditioned market access on the conservation policies of foreign countries. Thus, it cannot be justified under GATT Article XX. However, the WTO Appellate Body overruled the Panel's reasoning. The Appellate Body held that a WTO member requires from exporting countries compliance, or adoption of, certain policies prescribed by the importing country does not render the measure inconsistent with the WTO obligation. Although the Appellate Body still found that the U.S. shrimp embargo was not justified under GATT Article XX, the decision was not on the grounds that the U.S. sea turtle law itself was inconsistent with GATT. Rather, the ruling was on the grounds that the application of the law constituted "arbitrary and unjustifiable discrimination" between WTO members (WTO 1998). The WTO Appellate Body pointed to a 1996 regional agreement reached at the U.S. initiation, namely the Inter-American Convention on Protection and Conservation of Sea Turtles, as evidence of the feasibility of such an approach (WTO 1998; Berger 1999). Here, the Appellate Body again advanced the standing of multilateral environmental treaties (Zhang 2004; Zhang and Assunção 2004). Thus, it follows that this trade dispute under the WTO may have been interpreted as a clear preference for actions taken pursuant to multilateral agreements and/or negotiated through international cooperative arrangements, such as the Kyoto Protocol and its successor. However, this interpretation should be viewed with great caution, because there is no doctrine of *stare decisis* (namely, "stand by things already established by prior decisions") in the WTO; the GATT/WTO panels are not bound by previous panel decisions (Zhang and Assunção 2004).

Moreover, the WTO Shrimp-Turtle dispute settlement has a bearing on the ongoing discussion on the "comparability" of climate actions in a post-2012 climate change regime. The Appellate Body found that when the U.S. shifted its standard from requiring measures essentially the same as the U.S. measures to "the adoption of a program *comparable* in effectiveness", this new standard would comply with the WTO disciplines (WTO 2001, paragraph 144). Some may view that this case opens the door for U.S. climate legislation that bases trade measures on an evaluation of the comparability of climate actions taken by other trading countries. Comparable action can be interpreted as meaning action comparable in effect as the "*comparable* in effectiveness" in the Shrimp-Turtle dispute. It can also be interpreted as meaning "the comparability of efforts". The Bali Action Plan adopts the latter interpretation, using the terms comparable as a means of ensuring that developed countries undertake commitments comparable to each other (Zhang 2009a).

In the case of a WTO dispute, the question will arise whether there are any alternatives to trade provisions that could be reasonably expected to fulfill the same function but are not inconsistent or less inconsistent with the relevant WTO provisions. Take the GATT Thai cigarette dispute as a case in point. Under Section 27 of the Tobacco Act of 1966, Thailand restricted imports of cigarettes and imposed a higher tax rate on imported cigarettes when they were allowed on the three occasions since 1966, namely in 1968–70, 1976 and 1980. After consultations with Thailand failed to lead to a solution, the U.S. requested in 1990 the Dispute Settlement Panel to rule on the Thai action on the grounds that it was inconsistent with Article XI:1 of the General Agreement; was not justified by the exception under Article XI:2(c), because cigarettes were not an agricultural or fisheries product in the meaning of Article XI:1; and was not justified under Article XX (b) because the restrictions were not necessary to protect human health, i.e. controlling the consumption of cigarettes did not require an import ban. The Dispute Settlement Panel ruled against Thailand. The Panel found that Thailand had acted inconsistently with Article XI:1 for having not granted import licenses over a long period of time. Recognizing that XI:2(c) allows exceptions for fisheries and agricultural products if the restrictions are necessary to enable governments to protect farmers and fishermen who, because of the perishability of their produce, often could not withhold excess supplies of the fresh product from the market, the Panel found that cigarettes were not "like" the fresh product as leaf tobacco and thus were not among the products eligible for import restrictions under Article XI:2 (c). Moreover, the Panel acknowledged that Article XX(b) allowed contracting parties to give priority to human health over trade liberalization. The Panel held the view that the import restrictions imposed by Thailand could be considered to be "necessary" in terms of Article XX(b) only if there were no alternative measure consistent with the General Agreement, or less inconsistent with it, which Thailand could reasonably be expected to employ to achieve its health policy objectives. However, the Panel found the Thai import restriction measure not necessary because Thailand could reasonably be expected to take strict, non-discriminatory labelling and ingredient disclosure regulations and to ban all the direct and indirect advertising, promotion and sponsorship of cigarettes to ensure the quality and reduce the quantity of cigarettes sold in Thailand. These alternative measures are considered WTO-consistent to achieve the same health policy objectives as Thailand now pursues through an import ban on all cigarettes whatever their ingredients (GATT 1990). Simply put, in the GATT Thai cigarette dispute, the Dispute Settlement Panel concluded that Thailand had legitimate concerns with health but it had measures available to it other than a trade ban that would be consistent with the General Agreement on Tariffs and Trade (e.g. bans on advertising) (GATT 1990).

Indeed, there are alternatives to resorting to trade provisions to protect the U.S. trade-sensitive, energy-intensive industries during a period when the U.S. is taking good-faith efforts to negotiate with trading partners on comparable actions. One way to address competitiveness concerns is to initially allocate free emission allowances to those sectors vulnerable to global competition, either totally or

partially.[3] Bovenberg and Goulder (2002) found that giving out about 13 % of the allowances to fossil fuel suppliers freely instead of auctioning in an emissions trading scheme in the U.S. would be sufficient to prevent their profits with the emissions constraints from falling in comparison with those without the emissions constraints.

There is no disagreement that the allocation of permits to emissions sources is a politically contentious issue. Grandfathering, or at least partially grandfathering, helps these well-organized, politically highly-mobilized industries or sectors to save considerable expenditures and thus increases the political acceptability of an emissions trading scheme, although it leads to a higher economic cost than a policy where the allowances are fully auctioned.[4] This explains why the sponsors of the American Clean Energy and Security Act of 2009 had to make a compromise amending the Act to auction only 15 % of the emission permits instead of the initial proposal for auctioning all the emission permits in a proposed cap-and-trade regime. This change allowed the Act to pass the U.S. House of Representatives Energy and Commerce Committee in May 2009.

However, it should be pointed out that although grandfathering is thought of as giving implicit subsidies to these sectors, grandfathering is less trade-distorted than the exemptions from carbon taxes (Zhang 1998b, 1999), which means that partially grandfathering is even less trade-distorted than the exemptions from carbon taxes. To understand their difference, it is important to bear in mind that grandfathering itself also implies an opportunity cost for firms receiving permits: what matters here is not how firms get your permits, but what firms can sell them for—that is what determines opportunity cost. Thus, even if permits are awarded gratis, firms will value them at their market price. Accordingly, the prices of energy will adjust to reflect the increased scarcity of fossil fuels. This means that regardless of whether emissions permits are given out freely or are auctioned by the government, the effects on energy prices are expected to be the same, although the initial ownership of emissions permits differs among different allocation methods. As a result, relative prices of products will not be distorted relative to their pre-existing levels and switching demand towards products of those firms whose permits are awarded

[3] To be consistent with the WTO provisions, foreign producers could arguably demand the same proportion of free allowances as U.S. domestic producers in case they are subject to border carbon adjustments.

[4] In a second-best setting with pre-existing distortionary taxes, if allowances are auctioned, the revenues generated can then be used to reduce pre-existing distortionary taxes, thus generating overall efficiency gains. Parry et al. (1999), for example, show that the costs of reducing U.S. carbon emissions by 10 % in a second-best setting with pre-existing labor taxes are five times more costly under a grandfathered carbon permits case than under an auctioned case. This is because the policy where the permits are auctioned raises revenues for the government that can be used to reduce pre-existing distortionary taxes. By contrast, in the former case, no revenue-recycling effect occurs, since no revenues are raised for the government. However, the policy produces the same tax-interaction effect as under the latter case, which tends to reduce employment and investment and thus exacerbates the distortionary effects of pre-existing taxes (Zhang 1999).

gratis (the so-called substitution effect) will not be induced by grandfathering. This makes grandfathering different from the exemptions from carbon taxes. In the latter case, there exist substitution effects (Zhang 1998b, 1999). For example, the Commission of the European Communities (CEC) proposal for a mixed carbon and energy tax[5] provides for exemptions for the six energy-intensive industries (i.e., iron and steel, non-ferrous metals, chemicals, cement, glass, and pulp and paper) from coverage of the CEC tax on grounds of competitiveness. This not only reduced the effectiveness of the CEC tax in achieving its objective of reducing CO_2 emissions, but also made the industries, which were exempt from paying the CEC tax, improve their competitive position in relation to those industries which were not. Therefore, there would be some switching of demand towards the products of these energy-intensive industries, which was precisely the reaction that such a tax should avoid (Zhang 1998a).

The import allowance requirement approach would distinguish between two otherwise physically identical products on the basis of climate actions in place in the country of origin. This discrimination of like products among trading nations would constitute a prima facie violation of WTO rules. To pass WTO scrutiny of trade provisions, the U.S. is likely to make reference to the health and environmental exceptions provided under GATT Article XX (see Box 1). This Article itself is the exception that authorizes governments to employ otherwise GATT-illegal measures when such measures are necessary to deal with certain enumerated public policy problems. The GATT panel in Tuna/Dolphin II concluded that Article XX does not preclude governments from pursuing environmental concerns outside their national territory, but such extra-jurisdictional application of domestic laws would be permitted only if aimed *primarily* (emphasis added) at having a conservation or protection effect (GATT 1994; Zhang 1998b). The capacity of the planet's atmosphere to absorb greenhouse gas emissions without adverse impacts is an 'exhaustible natural resource.' Thus, if countries take measures on their own including extra-jurisdictional application *primarily* to prevent the depletion of this 'exhaustible natural resource,' such measures will have a good justification under GATT Article XX. Along this reasoning, if the main objective of trade provisions is to protect the environment by requiring other countries to take actions comparable to that of the U.S., then mandating importers to purchase allowances from the designated special international reserve allowance pool to cover the carbon emissions associated with the manufacture of that product is debatable. To increase the prospects for a successful WTO defense, I think that trade provisions can refer to the designated special international reserve allowance pool, but may not do so without adding "or equivalent." This will allow importers to submit equivalent

[5] As part of its comprehensive strategy to control CO_2 emissions and increase energy efficiency, a carbon/energy tax had been proposed by the CEC. The CEC proposal was that member states introduce a carbon/energy tax of US$ 3 per barrel oil equivalent in 1993, rising in real terms by US $ 1 a year to US$ 10 per barrel in 2000. After the year 2000 the tax rate would remain at US$ 10 per barrel at 1993 prices. The tax rates were allocated across fuels, with 50 % based on carbon content and 50 % on energy content (Zhang 1998a).

emission reduction units that are not necessarily allowances but are recognized by international treaties to cover the carbon contents of imported products.

Clearly, these concerns raised in the Lieberman-Warner bill have shaped relevant provisions in the Waxman-Markey bill to deal with the competitiveness and leakage concerns. Accordingly, the Waxman-Markey bill has avoided all the aforementioned controversies raised in the Lieberman-Warner bill. Unlike the EAR in the Lieberman-Warner bill which focuses exclusively on imports into the U.S., but does nothing to address the competitiveness of U.S. exports in foreign markets, the Waxman-Markey bill included both rebates for few energy-intensive, trade-sensitive sectors[6] and free emission allowances to help not to put U.S. manufacturers at a disadvantage relative to overseas competitors. Unlike the Lieberman-Warner bill in the U.S. Senate, the Waxman-Markey bill also gives China, India and other major developing nations time to enact their climate-friendly measures. Under the Waxman-Markey bill, the International Reserve Allowance Program may not begin before 1 January 2025. The U.S. president may only implement an International Reserve Allowance Program for sectors producing primary products. While the bill called for a "carbon tariff" on imports, it very much framed that measures as a last resort that a U.S. president could impose at his or her discretion regarding border adjustments or tariffs. However, in the middle of the night before the vote on 26 June 2009, a provision was inserted in this House bill that requires the President, starting in 2020, to impose a border adjustment—or tariffs—on certain goods from countries that do not act to limit their greenhouse gas emissions. The President can waive the tariffs only if he receives explicit permission from U.S. Congress (Broder 2009). The last-minute changes in the bill changed a Presidential long-term back-up option to a requirement that the President put such tariffs in place under the specified conditions. Such changes significantly changed the spirit of the bill, moving it considerably closer to risky protectionism. While praising the passage of the House bill as an "extraordinary first step," president Obama opposed a trade provision in that bill.[7] The carbon tariff proposals have also drawn fierce criticism from China and India. Without specific reference to the U.S. or the Waxman-Markey bill, China's Ministry of Commerce said in a statement posted on its website that proposals to impose "carbon tariffs" on imported products will violate the rules of the WTO. That would enable developed countries to "resort to trade in the name of protecting the environment." The carbon tariff proposal runs against the principle of "common but differentiated responsibilities," the spirit of the Kyoto Protocol. This will neither help strengthen confidence that the international community can cooperate to handle the (economic) crisis, nor help

[6] See Genasci (2008) for discussion on complicating issues related to how to rebate exports under a cap-and-trade regime.

[7] President Obama was quoted as saying that "At a time when the economy worldwide is still deep in recession and we've seen a significant drop in global trade, I think we have to be very careful about sending any protectionist signals out there. I think there may be other ways of doing it than with a tariff approach." (Broder 2009).

any country's endeavors during the climate change negotiations. Thus, China is strongly opposed to it (MOC of China 2009). A study by Mattoo et al. (2009) shows that such a carbon tariff would cut China's manufacturing exports by 21 % and India's by 16 %. No wonder that China and India warned angrily of trade wars if such border adjustment taxes were imposed (*The Economist* 2009).[8]

3.2 The Effectiveness and Methodological Challenges of an EAR

Proponents of an EAR argue that such a threat would be effective as an inducement for major emerging economies to take on such a level of climate action at which U.S. legislation aims. However, this is questionable. The EAR under the U.S. proposed cap-and-trade regime would not apply to all imports. Rather, it would specifically target primary emission-intensive products, such as steel, aluminium, and cement. Indeed, China has become a key producer of these primary products, accounting for 36 % of global steel production, 32 % of global aluminium production and over 50 % of global cement production in 2007. The logic for the threat of EAR is that the fear of losing market access for these products would be enough to jawbone China to take climate actions that it otherwise would not take. However, the problem with this logic is that China's burgeoning supply of these carbon-intensive products is not mainly destined for export. Rather, they are made in China for China, going primarily to meet China's own demand. As the world's largest steel export, China exported only 2 % of its steel production to the European Union and less than 1 % to the U.S. in 2007. As the world's largest cement producer[9] and exporter, China consumed 97 % of its cement domestically, and exported less than 1 % of its production to the U.S. in 2007 (Houser 2008; Houser et al. 2008). Even if an EAR is implemented jointly with the European Union, it has little leverage effect on China because China is unlikely to raise the cost of producing 97 % of its output for domestic market in order to protect a market of

[8] China's stance on carbon tariffs is in conflict with its statement for importers being responsible for China's carbon emissions embodied in trade (Zhang 2012a). Being the workshop of the world and having the export-driven economy have led to a chunk of China's carbon emissions embedded in trade (e.g., Davis and Caldeira 2010; Peters et al. 2011). China certainly wants importers to cover some, if not all, of the costs of that. However, if this consumption-based accounting of CO_2 emissions, either implicitly or explicitly, is to indicate that the responsibility for the CO_2 emissions from the production of traded goods and services lies with the consumers in importing countries, it can then be argued that the final responsibility for regulating those CO_2 emissions lies with the governments of importing countries. Given that most carbon-intensive industries in the U.S. run a substantial trade deficit, this proposed EAR clearly aims to level the carbon playing field for domestic producers and importers.

[9] In 2012, China produced 2.16 billion tons of cement, accounting for 58 % of the total world cement production, and the India, the second largest producer, was far behind with 7 % of the world production (ICR 2013).

less than 3 % of its production abroad. Moreover, this effect on the targeted country will be further alleviated by re-routing trade flows to deliver the covered products from countries that are not subject to the EAR scheme. With Japan passing the comparability test and thus being exempted from an EAR under the proposed U.S. cap-and-trade regime, imposing an EAR on Chinese steel, but not on Japanese steel, could make Japanese steel more competitive in the U.S. market than Chinese steel. That could lead Japanese steel makers to sell more steel to the United States and Japanese steel consumers to import more from China (Houser et al. 2008). In the end, this neither affects China nor protects U.S. steel producers. Böhringer et al. (2010) show that China's and India's exports of the energy-intensive products are higher with the EU and the U.S. taking output-based allocations, exports rebates and import tariffs to complement their unilateral policy to cut their carbon emissions by 20 % relative to their baselines than without any climate policies. Even if China's and India's exports of these energy-intensive products are lower when the EU and the U.S. take full border adjustment than without any climate policy, these sectors do not lose, because their aggregate production remains higher than without any climate policy.

Besides the issue of WTO consistency and the ineffectiveness of an EAR in leveraging China to change behavior, there will be methodological challenges in implementing an EAR under a cap-and-trade regime, although such practical implementation issues are secondary concerns. Identifying the appropriate carbon contents embodied in traded products will present formidable technical difficulties, given the wide range of technologies in use around the world and very different energy resource endowments and consumption patterns among countries. In the absence of any information regarding the carbon content of the products from exporting countries, importing countries, the U.S. in this case, could adopt either of the two approaches to overcoming information challenges in practical implementation. One is to prescribe the tax rates for the imported product based on U.S. domestically predominant method of production for a like product, which sets the average embedded carbon content of a particular product (Zhang 1998b; Zhang and Assunção 2004). This practice is by no means without foundation. For example, the U.S. Secretary of the Treasury has adopted the approach in the tax on imported toxic chemicals under the Superfund Tax (GATT 1987; Zhang 1998b). An alternative is to set the best available technology (BAT) as the reference technology level and then use the average embedded carbon content of a particular product produced with the BAT in applying border carbon adjustments (Ismer and Neuhoff 2007). Generally speaking, developing countries will bear a lower cost based on either of the approaches than using the nation-wide average carbon content of imported products for the country of origin, given that less energy-efficient technologies in developing countries produce products of higher embedded carbon contents than those like products produced by more energy-efficient technologies in the U.S. Mattoo et al. (2009) show that taxing the carbon footprint of imports based on U.S. domestic production would reduce China's and India's exports by around 3 %, instead of 21 % for China and 16 % for India if a tariff is based on the amount emitted to make the imported products in China and India. However, to be

more defensible, either of the approaches should allow foreign producers to challenge the carbon contents applied to their products to ensure that they will not pay for more than they have actually emitted.

4 How Should China Respond to the U.S. Proposed Carbon Tariffs?

So far, the discussion has been focused on the U.S. which is considering unilateral trade measures. Now that the inclusion of border carbon adjustment measures is widely considered essential to secure passage of any U.S. climate legislation, the question is then how China should respond to the U.S. proposed carbon tariffs.

4.1 A Serious Commitment to Find a Global Solution to the Threat of Climate Change

First of all, China needs to credibly indicate a serious commitment to address climate change issues to challenge the legitimacy of the U.S. imposing carbon tariffs. Indeed, if China's energy use and the resulting carbon emissions had followed their trends between 1980 and 2000, during which China achieved a quadrupling of its GDP with only a doubling of energy consumption (Zhang 2003), rather than surged since 2002, then the position of China in the international climate debate would be very different from what it is today. On the trends of the 1980s and 1990s, the U.S. Energy Information Administration (EIA 2004) estimated that China's CO_2 emissions were not expected to catch up with the world's largest carbon emitter by 2030. However, China's energy use has surged since the turn of this century, almost doubling between 2000 and 2007. Despite similar rates of economic growth, the rate of growth in China's energy use during this period (9.74 % per year) has been more than twice that of the last two decades in the past century (4.25 % per year) (National Bureau of Statistics of China 2008). As a result, China was already the world's largest carbon emitter in 2007, instead of "until 2030" as estimated as late as 2004.

It is conceivable that China will argue that its high absolute emission levels are the combined effects of a large population, a coal-fueled economy and being the workshop of the world, the latter of which leads to a hefty chunk of China's emissions embedded in goods that are exported to industrialized countries (Zhang 2010b, 2012a). China's arguments are legitimate. The country has every right to do that. Anyhow, China's share of the world's cumulative energy-related CO_2 emissions was only 8 % from 1900 to 2005, far less than 30 % for the U.S., and is still projected to be lower than those for the U.S. in 2030. On a per capita basis, China's CO_2 emissions are currently only one-fifth of that of the U.S., and are still

anticipated to be less than half of that of the U.S. in 2030 (IEA 2007). However, the number one position, in absolute terms, has put China in the spotlight just at a time when the world's community starts negotiating a post-Kyoto climate regime under the Bali Roadmap. There are renewed interests in and debates on China's role in combating global climate change.

Given the fact that China is already the world's largest carbon emitter and its emissions continue to rise rapidly in line with its industrialization and urbanization, China is seen to have greater capacity, capability and responsibility. The country is facing great pressure both inside and outside international climate negotiations to exhibit greater ambition. As long as China does not signal well ahead the time when it will take on the emissions caps, it will always be confronted with the threats of trade measures. In response to these concerns and to put China in a positive position, I propose that at current international climate talks China should negotiate a requirement that greenhouse gas emissions in industrialized countries be cut at least by 80 % by 2050 relative to their 1990 levels and that per capita emissions for all major countries by 2050 should be no more than the world's average at that time. Moreover, it would be in China's own best interest if, at the right time (e.g., at a time when the U.S. Senate is going to debate and ratify any global deal that would emerge from international negotiations), China signals well ahead that it will take on binding absolute emission caps around the year 2030.[10]

4.1.1 Why Around 2030 for Timing China's Absolute Emissions Caps?

Many factors need to be taken into consideration in determining the timing for China to take on absolute emissions caps. Taking the commitment period of 5 years that the Kyoto Protocol has adopted, I think the fifth commitment period (2028–2032), or around 2030 is not an unreasonable expected date on which China needs to take on absolute emissions caps for the following reasons. While this date is later than the time frame that the U.S. and other industrialized countries would like to see, it would probably still be too soon from China's perspective.

First, the fourth assessment report of the IPCC recommends that global greenhouse gas emissions should peak by 2020 at the latest and then turn downward, to avoid dangerous climate change consequences. With China already the world's largest carbon emitter, the earlier China takes on emissions caps, the more likely that goal can be achieved. However, given China's relatively low development stage and its rapidly growing economy fueled by coal, its carbon emissions are still on the climbing trajectories beyond 2030, even if some energy saving policies and measures have been factored into such projections.

[10] Xie Zhenghua, Vice Chairman of the National Development and Reform Commission and head of China's delegation of international climate change negotiations, indicated in a press conference on 14 July 2014, Berlin, that China could present plans for an emissions cap as early as in the first half of the year 2015 (Xinhua 2014).

Second, before legally binding commitments become applicable to Annex I (industrialized) countries, they have a grace period of 16 years starting from the Earth Summit in June 1992 when Annex I countries promised to individually or jointly stabilize greenhouse gases emissions at their 1990 levels by the end of the past century to the beginning of the first commitment period in 2008. This precedent points to a first binding commitment period for China starting around 2030.

Third, with China still dependent on coal to meet the bulk of its energy needs for the next several decades, the commercialization and widespread deployment of carbon capture and storage (CCS) is a crucial option for reducing both China's and global CO_2 emissions. Thus far, CCS has not been commercialized anywhere in the world, and it is unlikely, given current trends, that this technology will find large-scale application either in China or elsewhere before 2030. Until CCS projects are developed to the point of achieving economies of scale and bringing down the costs, China will not feel confident about committing to absolute emissions caps.

Fourth, developing countries need reasonable time to develop and operate national climate policies and measures. This is understood by knowledgeable U.S. politicians, such as Reps. Henry Waxman (D-CA) and Edward Markey (D-MA), the sponsors of the American Clean Energy and Security Act of 2009. Indeed, the Waxman-Markey bill gives China, India and other major developing nations time to enact climate-friendly measures. While the bill called for a "carbon tariff" on imports, it very much framed that measures as a last resort that a U.S. president could impose at his or her discretion not until 1 January 2025 regarding border adjustments or tariffs, although in the middle of the night before the vote on 26 June 2009, a compromise was made to further bring forward the imposition of carbon tariffs.

Fifth, another timing indicator is a lag between the date that a treaty is signed and the starting date of the budget period. With the Kyoto Protocol signing in December 1997 and the first budget period staring 2008, the earliest date to expect China to introduce binding commitments would not be before 2020. Even without this precedent for Annex I countries, China's demand is by no means without foundation. For example, the Montreal Protocol on Substances that Deplete the Ozone Layer grants developing countries a grace period of 10 years (Zhang 2000). Given that the scope of economic activities affected by a climate regime is several orders of magnitude larger than those covered by the Montreal Protocol, it is arguable that developing countries should have a grace period much longer than 10 years, after mandatory emission targets for Annex I countries took effect in 2008.

Sixth, while it is not unreasonable to grant China a grace period before taking on emissions caps, it would hardly be acceptable to delay the timing beyond 2030. China is already the world's largest carbon emitter and, in 2010 it overtook Japan as the world's second largest economy, although its per capita income and emissions are still very low. After another 20 years of rapid development, China's economy will overtake that of the world's second-largest emitter (the U.S.) in size, whereas China's absolute emissions are well above those of number two. Its baseline carbon emissions in 2030 are projected to reach 11.6 billion tons of carbon dioxide, relative to 5.5 billion tons for the U.S. and 3.4 billion tons for India (IEA 2009), the world's

most populous country at that time (UNDESA 2009).[11] This gap with the U.S. could be even bigger, provided that the U.S. would cut its emissions to the levels proposed by the Obama administration and under the American Clean Energy and Security Act of 2009. By then, China's per capita income will reach a very reasonable level, whereas its per capita emissions of 8.0 tons of carbon dioxide are projected to be well above the world's average of 4.9 tons of carbon dioxide and about 3.4 times that of India (IEA 2009). While the country is still on the climbing trajectory of carbon emissions under the business as usual scenario, China will have lost ground by not taking on emissions caps when the world is facing ever alarming climate change threats and developed countries will have achieved significant emissions reductions by then.

4.1.2 Three Transitional Periods of Increasing Climate Obligations

It is hard to imagine how China could apply the brakes so sharply as to switch from rapid emissions growth to immediate emissions cuts, without passing through several intermediate phases. After all, China is still a developing country, no matter how rapidly it is expected to grow in the future. Taking the commitment period of 5 years as the Kyoto Protocol has adopted, I envision that China needs the following three transitional periods of increasing climate obligations, before taking on absolute emissions caps.

First, further credible energy-conservation commitments starting 2013.

China has already committed itself to quantified targets on energy conservation and the use of clean energy. It needs to extend its level of ambition, further making credible quantified domestic commitments in these areas for the second commitment period. Such commitments would include but are not limited to continuing to set energy-saving and pollutant control goals in the subsequent national 5-year economic blueprints as challenging as the current 11th 5-year blueprint does, increasing investment in energy conservation and improving energy efficiency, significantly scaling up the use of renewable energies and other low-carbon technologies, in particular wind power and nuclear power, and doubling or even quadrupling the current unit capacity below which thousands of small, inefficient coal-fired plants need to be decommissioned (Zhang 2010b).

Second, voluntary "no lose" emissions targets starting 2018.

During this transition period, China could commit to adopting voluntary emission reduction targets. Emissions reductions achieved beyond these "no lose" targets would then be eligible for sale through carbon trading at the same world market price as those of developed countries whose emissions are capped, relative to the lower prices that China currently receives for carbon credits generated from

[11] UNDESA (2009) projects that China's population would peak at 1462.5 millions around 2030, while India's population would be projected to be at 1484.6 millions in 2030 and further grow to 1613.8 millions in 2050.

clean development mechanism projects, meaning that China would suffer no net economic loss by adhering to the targets.

Third, binding carbon intensity targets starting 2023, leading to emissions caps around 2030.

While China is expected to adopt the carbon intensity target as a domestic commitment in 2011, China adopting binding carbon intensity targets in 2023 as its international commitment would be a significant step towards committing to absolute emissions caps during the subsequent commitment period. At that juncture, having been granted three transition periods, China could then be expected to take on binding emissions caps, starting around 2030 and to aim for the global convergence of per capita emissions by 2050.

4.2 A Clear Need Within a Climate Regime to Define Comparable Efforts Towards Climate Mitigation and Adaptation

While indicating, well in advance, that it will take on absolute emissions caps around the year 2030, being targeted by such border carbon adjustment measures, China should make the best use of the forums provided under the UNFCCC and its KP to effectively deal with the proposed measures to its advantage (Zhang 2009b). However, China and other leading developing countries appear to be comfortable with WTO rules and institutions defending their interests in any dispute that may arise over unilateral trade measures. Top Chinese officials in charge of climate issues and the Brazilian climate ambassador consider the WTO as the proper forum when developing countries are required to purchase emission allowances in the U.S. proposed cap-and-trade regime (Samuelsohn 2007). This was reinforced in the Political Declaration of the Leaders of Brazil, China, India, Mexico and South Africa (the so-called G5) in Sapporo, Japan, July 8, 2008 that "in the negotiations under the Bali Road Map, we urge the international community to focus on the core climate change issues rather than inappropriate issues like competitiveness and trade protection measures which are being dealt with in other forums." China may fear that the discussion on these non-core issues will overshadow those core issues mandated under the Bali Action Plan (BAP). However, in my view, defining comparable efforts towards climate mitigation and adaptation within a climate regime is critical to addressing carbon tariffs of far-reaching implications.

The BAP calls for "comparability of efforts" towards climate mitigation actions only among industrialized countries. However, the lack of a clearly defined notion of what is comparable has led to diverse interpretations of the concept of comparability. Moreover, there is no equivalent language in the BAP to ensure that developing country actions, whatever might be agreed to at Copenhagen or later, are comparable to those of developed countries. So, some industrialized countries,

if not all, have extended the scope of its application beyond industrialized countries themselves, and are considering the term "comparable" as the standard by which to assess the efforts made by all their trading partners in order to decide on whether to impose unilateral trade measures to address their own competitiveness concerns. Such a lack of common understanding will lead each country to define whether other countries have made comparative efforts to its own. This can hardly be objective, and in turn may lead one country to misuse unilateral trade measures against other trading partners to address its own competitiveness concerns.

This is not just hypothetical. Rather, it is very real as the Lieberman-Warner bill in the U.S. Senate and the Waxman-Markey bill in the U.S. House demonstrated. If such measures became law and were implemented, trading partners might choose to challenge U.S. before WTO. If a case like this is brought before a WTO panel, that panel would likely look to the UNFCCC for guidance on an appropriate standard for the comparability of climate efforts to assess whether the accused country has followed the international standard when determining comparability, as preceded in the Shrimp-Turtle dispute where the WTO Appellate Body considered the Rio Declaration on Environment and Development (WTO 1998). Otherwise, that WTO panel will have no choice but to fall back on the aforementioned Shrimp-Turtle jurisprudence (see Box 2), and would be influenced by the fear of the political fall out from overturning U.S. unilateral trade measures in its domestic climate legislation.

If the U.S. measures were allowed to stand, not only China would suffer, but it would also undermine the UNFCCC's legitimacy in setting and distributing climate commitments between its parties (Werksman and Houser 2008). Therefore, as strongly emphasized in my interview in the *New York Times* (Stanway 2009), rather than reliance solely on WTO, there is a clear need within a climate regime to define comparable efforts towards climate mitigation and adaptation to discipline the use of unilateral trade measures at the international level, taking into account differences in their national circumstances, such as current level of development, per capita GDP, current and historical emissions, emission intensity, and per capita emissions. If well defined, that will provide some reference to WTO panels in examining cases related to comparability issues.

Indeed, defining the comparability of climate efforts can be to China's advantage. China has repeatedly emphasized that it has taken many climate mitigation efforts. No country denies that, but at most China has received limited appreciation of its abatement efforts. Being praised for such efforts, China is urged to do "a lot more" (Doyle 2009). However, if the comparability of climate efforts is defined, then the many abatement efforts that China has been taking can be converted into the corresponding equivalent carbon allowance prices under the European Union and U.S. proposed emissions trading schemes. If such an equivalent is higher than the prevailing U.S. allowance price, there is no rationale for the U.S. to impose carbon tariffs on Chinese products. If it is lower, then the level of carbon tariffs is only a differential between the equivalent and the prevailing U.S. allowance price.

Take export tariffs that China applied on its own as a case in point. During 2006–8, the Chinese government levied, on its own, export taxes on a variety of

energy and resource intensive products to discourage exports of those products that rely heavily on energy and resources and to save scarce energy and resources (Zhang 2008). Given the fact that China is a price setter in world aluminum, cement, iron and steel markets, its export policies have a significant effect on world prices and thus on EU competitiveness (Dröge et al. 2009). From the point of view of leveling the carbon cost playing field, such export taxes increase the price at which energy-intensive products made in China, such as steel and aluminum, are traded in world markets. For the EU and U.S. producers, such export taxes imposed by their major trading partner on these products take out at least part, if not all, of the competitive pressure that is at the heart of the carbon leakage debates. Being converted into the implicit carbon costs, the average export tariffs of 10–15 % applied in China on its own during 2006–08 are estimated to be equivalent to a EU allowance price of 30–43 €/tCO_2 for steel and of 18–26 €/tCO_2 for aluminium (Wang and Voituriez 2009). The estimated levels of CO_2 price embedded in the Chinese export taxes on steel and aluminium are very much in the same range as the average price of the EU allowances over the same period. Moreover, carbon tariffs impact disproportionally on energy-intensive manufacturing. Manufacturing contributes to 34 % of China's GDP relative to the corresponding 16 % for India, and China's GDP is 3.5–4.0 times that of India in 2008 (World Bank 2010). This suggests that, in volume terms, energy-intensive manufacturing in China values 7–8 times that of India. Clearly, carbon tariffs have a greater impact on China than on India. This raises the issue of whether China should hold the same stance on this issue as India as it does now, although the two largest developing countries in international climate change negotiations have taken and should continue to hold to a common position on developed country obligations on ambitious emissions reductions, adequate technology transfer and financing.

5 Conclusion

With governments from around the world trying to hammer out a post-2012 climate change agreement, no one would disagree that a U.S. commitment to cut greenhouse gas emissions is essential to such a global pact. However, despite U.S. president Obama's announcement to push for a commitment to cut U.S. greenhouse gas emissions by 17 % by 2020, in reality it is questionable whether U.S. Congress will agree to specific emissions cuts, although they are not ambitious at all from the perspectives of both the EU and developing countries, without imposing carbon tariffs on Chinese products to the U.S. market, even given China's own announcement to voluntarily seek to reduce its carbon intensity by 40–45 % over the same period.[12]

[12] As long as China's pledges are in the form of carbon intensity, the reliability of both emissions and GDP data matters. See Zhang (2010a, 2011a) for discussions on the reliability and revisions of

This dilemma is partly attributed to flaws in current international climate negotiations, which have been focused on commitments on the two targeted dates: 2020 and 2050. However, with the commitment period only up to 2020, there is very little room left for the U.S. and China, although for reasons very different from each other.

As pointed out in Introduction, the IPCC fourth assessment report recommends that global greenhouse gas emissions should peak by 2020 at the latest and then turn downward in order to avoid dangerous climate change consequences, calling for developed countries to cut their greenhouse gas emissions by 25–40 % by 2020 relative to their 1990 levels. This recommendation was incorporated into the Bali Roadmap at the United Nations Climate Summit in 2007. This seems a logical choice. Once the long-term goal (namely the target for 2050) is set, one needs a mid-term goal to help facilitate the long-term one. From then, the negotiations on industrialized countries' commitments have been on what emissions reduction targets would be in 2020.

However, 2020 is just around the corner. More importantly, this date does not accommodate well the world's two largest greenhouse gas emitters, namely the U.S. and China. Because the U.S. withdrew from the Kyoto Protocol, it has not made any substantial preparations to cut emissions as other Kyoto-constrained industrialized countries have done over the past decade. Whether we like it or not, this is a political reality. It is very hard for an unprepared country like the U.S. to take on a substantial emissions cut in 2020 as developing countries have demanded, although it should on a moral ground.

In the meantime, China overtook the U.S. to become the world's largest greenhouse gas emitter in 2007, at least 20 years earlier than had been estimated by the U.S. EIA (2004) as late as 2004. IEA (2009) estimates that about half of the growth of global energy-related CO_2 emissions until 2030 will come from China. Combined with huge trade deficit with China, the U.S. has pushed for China to take on emissions caps as early as 2020. Otherwise, the goods exported from China to US markets might be subject to carbon tariffs. However, as argued in this paper and Zhang (2011b), the year 2020 is not a realistic date for China to take on the absolute emissions cap, because its carbon emissions would be still on climbing trajectories beyond 2030, even if some energy-saving policies and measures have been factored into such projections. Meanwhile, taking on commitments for 2050 seems too far away for politicians.

In my view, if the commitment period is extended to 2030, it would really open the possibility for the U.S. and China to make the commitments that each wants from the other in the same form, although the scale of reductions would differ from each other. By 2030, the U.S. will be able to commit to much deeper emission cuts that China and developing countries have demanded, while, as argued in this paper, China would have approached the threshold to take on the absolute emission cap

---

China's statistical data on energy and GDP, and their implications for meeting China's energy-saving goal in 2010 and its proposed carbon intensity target in 2020.

that the U.S. and other industrialized countries have long asked for. Being aware of his proposed provisional target in 2020 well below what is internationally expected from the U.S., president Obama announced a provisional target of a 42 % reduction below 2005 levels in 2030 to demonstrate the U.S. continuing commitments and leadership to find a global solution to the threat of climate change. While the U.S. proposed level of emission reductions for 2030 is still not ambitious enough, president Obama inadvertently points out the right direction of international climate negotiations. They need to look at the targeted date of 2030. If international negotiations could lead to much deeper emission cuts for developed countries as well as the absolute emission caps for major developing countries in 2030, that would significantly reduce the legitimacy of the U.S. proposed carbon tariffs and, if implemented, their prospect for withstanding a challenge before the WTO.

However, if the international climate change negotiations continue on their current course, the inclusion of border carbon adjustment measures then seems essential to secure passage of any U.S. legislation capping its own greenhouse gas emissions. Moreover, the joint WTO-UNEP report indicates that border carbon adjustment measures might be allowed under the existing WTO rules, depending on how such measures are designed and the specific conditions for implementing them (WTO and UNEP 2009). Thus, on the U.S. side, in designing such trade measures, WTO rules need to be carefully scrutinised, and efforts need to be made early on to ensure that the proposed measures comply with them. After all, a conflict between the trade and climate regimes, if it breaks out, helps neither trade nor the global climate. The U.S. needs to explore, with its trading partners, cooperative sectoral approaches to advancing low-carbon technologies and/or concerted mitigation efforts in a given sector at the international level. Moreover, to increase the prospects for a successful WTO defence of the Waxman-Markey type of border adjustment provision, there should be: (1) a period of good faith efforts to reach agreements among the countries concerned before imposing such trade measures; (2) consideration of alternatives to trade provisions that could reasonably be expected to fulfill the same function but are not inconsistent or less inconsistent with the relevant WTO provisions; and (3) trade provisions that can refer to the designated special international reserve allowance pool, but should allow importers to submit equivalent emission reduction units that are recognized by international treaties to cover the carbon contents of imported products.

Being targeted by such border carbon adjustment measures, China needs to creditably indicate a serious commitment to address climate change issues to challenge the legitimacy of the U.S. imposing carbon tariffs. Being seen with greater capacity, capability and responsibility, China is facing great pressure both inside and outside international climate negotiations to exhibit greater ambition. As long as China does not signal well ahead that it will take on the emissions caps, it will always face the threats of trade measures. In response to these concerns and to put China in a positive position, the paper proposes that at current international climate talks China should negotiate a requirement that greenhouse gas emissions in industrialized countries be cut at least by 80 % by 2050 relative to their 1990 levels and that per capita emissions for all major countries by 2050 should be no

more than the world's average at that time. Moreover, it would be in China's own best interest if, at a right time (e.g., at a time when the U.S. Senate is going to debate and ratify any global deal that would emerge from Copenhagen or later), China signals well ahead that it will take on binding absolute emission caps around the year 2030.

However, it is hard to imagine how China could apply the brakes so sharply as to switch from rapid emissions growth to immediate emissions cuts, without passing through several intermediate phases. Taking the commitment period of 5 years that the Kyoto Protocol has adopted, the paper envisions that China needs the following three transitional periods of increasing climate obligations before taking on absolute emissions caps starting 2028 that will lead to the global convergence of per capita emissions by 2050: *First, further credible energy-conservation commitments starting 2013; second, voluntary "no lose" emission targets starting 2018*; and *third, binding carbon intensity targets as its international commitment starting 2023*. Overall, this proposal is a balanced reflection of respecting China's rights to grow and recognizing China's growing responsibility for increasing greenhouse gas emissions as the standards of living increase over time.

Meanwhile, China should make the best use of the forums provided under the UNFCCC and its KP to effectively deal with the proposed measures. I have argued that there is a clear need within a climate regime to define comparable efforts towards climate mitigation and adaptation to discipline the use of unilateral trade measures at the international level. As exemplified by export tariffs that China applied on its own during 2006–8, the paper shows that defining the comparability of climate efforts can be to China's advantage. Furthermore, carbon tariffs impact disproportionally on energy-intensive manufacturing. Given the fact that, in volume terms, energy-intensive manufacturing in China values 7–8 times that of India, carbon tariffs clearly impact much more on China than on India. This raises the issue of whether China should hold the same stance on this issue as India as it does now.

Finally, it should be emphasized that the Waxman-Markey type of border adjustment provision holds out more sticks than carrots to developing countries. If the U.S. and other industrialized countries really want to persuade developing countries to do more to combat climate change, they should first reflect on why developing countries are unwilling to and cannot afford to go beyond the existing stance in the first place. That will require industrialized countries to seriously consider developing countries' legitimate demand that industrialized countries need to demonstrate that they have taken the lead in reducing their own greenhouse gas emissions, provide significant funding to support developing country's climate change mitigation and adaptation efforts and to transfer low- or zero-carbon emission technologies at an affordable price to developing countries. Industrialized countries need to provide positive incentives to encourage developing countries to do more. Carrots should serve as the main means. Sticks can be incorporated, but only if they are credible and realistic and serve as a useful supplement to push developing countries to take actions or adopt policies and measures earlier than would otherwise have been the case. At a time when the world community is

negotiating a post-2012 climate regime, unrealistic border carbon adjustment measures as exemplified in the Waxman-Markey bill are counterproductive to help to reach such an agreement on comparable climate actions in the negotiations.

Acknowledgments This paper is a revised and expanded version of my article "The U.S. Proposed Carbon Tariffs, WTO Scrutiny and China's Responses" appearing in *International Economics and Economic Policy*, Vol. 7, Nos. 2/3, 2010, pp. 203–225.

References

American Clean Energy and Security Act. H.R. 2454 111th Cong (2009)

Berger JR (1999) Unilateral trade measures to conserve the world's living resources: an environmental breakthrough for the GATT in the WTO sea turtle case. Columbia J Environ Law 24:355–411

Bhagwati J, Mavroidis PC (2007) Is action against US exports for failure to sign Kyoto Protocol WTO-legal? World Trade Rev 6(2):299–310

Böhringer C, Fischer C, Rosendahl KE (2010) The global effects of subglobal climate policies. BE J Econ Anal Policy 10(2):1–35

Bounds A (2006) EU Trade Chief to Reject 'Green' Tax Plan. Financial Times, 17 Dec. http://www.ft.com/intl/cms/s/0/9dc90f34-8def-11db-ae0e-0000779e2340.html#axzz3g1BZ1tdW. Accessed 10 July 2015

Bovenberg AL, Goulder LH (2002) Addressing industry-distributional concerns in U.S. climate change policy. Unpublished manuscript, Department of Economics, Stanford University

Broder J (2009) Obama Opposes Trade Sanctions in Climate Bill. New York Times 28 June. http://www.nytimes.com/2009/06/29/us/politics/29climate.html?_r=0. Accessed 10 July 2015

Charnovitz S (2003) Trade and climate: potential conflicts and synergies beyond Kyoto: advancing the international effort against climate change. PEW CENTER. http://www.c2es.org/docUploads/Beyond_Kyoto_Trade.pdf. Accessed 13 July 2015

Davis SJ, Caldeira K (2010) Consumption-based accounting of CO_2 emissions. Proc Natl Acad Sci U S A 107(12):5687–5692

Department of Economic and Social Affairs of the United Nations (2009) World Population Prospects: The 2008 Revision. http://esa.un.org/unpp

Doyle A (2009) U.S. Praises China's Climate Efforts; Urges More. Reuters 29 Mar. http://www.reuters.com/article/environmentNews/idUSTRE52S1WP20090329. Accessed 10 July 2015

Dröge S et al (2009) Tackling leakage in a world of unequal carbon prices. Synthesis Report, Climate Strategies. Cambridge, United Kingdom

Energy Information Administration (2004) International Energy Outlook 2004. U.S. Energy Information Administration, Washington, DC

European Commission (2008) Proposal for a Directive of the European Parliament and of the Council: Amending Directive 2003/87/EC so as to Improve and Extend the Greenhouse Gas Emission Allowance Trading System of the Community. COM(2008) 16 final, Brussels

Genasci M (2008) Border tax adjustments and emissions trading: the implications of international trade law for policy design. Carbon Clim Law Rev 2(1):33–42

Haverkamp J (2008) International Aspects of a Climate Change Cap and Trade Program, Testimony before the Committee on Finance, U.S. Senate. http://finance.senate.gov/hearings/testimony/2008test/021408jhtest.pdf

Hollinger P (2009), Sarkozy Renews Carbon Tax Call, Financial Times, September 11, p 5

Houser T (2008) Carbon tariffs – why trade sanctions won't work. China Econ Q 12(3):33–38

Houser T, Bradley R, Childs B, Werksman J, Heilmayr R (2008) Leveling the carbon playing field: international competition and U.S. climate policy design. Peterson Institute for International Economics and World Resources Institute, Washington, DC
International Cement Review (2013) The Global Cement Report, 10th edn. ICR, London
International Energy Agency (2007) World Energy Outlook 2007. IEA, Paris
International Energy Agency (2009) World Energy Outlook 2009. IEA, Paris
Ismer R, Neuhoff K (2007) Border tax adjustment: a feasible way to support stringent emission trading. Eur J Law Econ 24(2):137–164
Mattoo A, Subramanian A, Mensbrugghe D, He J (2009) Reconciling Climate Change and Trade Policy. World Bank Working Paper No. 5123, Washington, DC
McBroom M (2008) How the IBEW-UWM-Boilermakers-AEP International Proposal Operates within Climate Legislation. 17 June. http://www.wita.org/index.php?tg=fileman&idx=viewfile&idf=189&id=4&gr=Y&path=&file=WITA-+Climate+Change+-+Overview+of+IBEW-AEP+Proposal+(June+17%2C+2008).pdf
Ministry of Commerce of China (2009) A Statement on "Carbon Tariffs." Beijing. http://www.mofcom.gov.cn/aarticle/ae/ag/200907/20090706375686.html (in Chinese)
Morris MG, Hill ED (2007) Trade is the key to climate change. The Energy Daily, 35(33) February 20. http://www.theenergydaily.com/articles/ed/2007/ed02200703.html
National Bureau of Statistics of China (2008) China Statistical Yearbook 2008. China Statistics Press, Beijing
Parry I, Williams RC, Goulder LH (1999) When can carbon abatement policies increase welfare? The fundamental role of distorted factor markets. J Environ Econ Manage 37(1):52–84
Peters GP, Minx JC, Weber CL, Edenhofer O (2011) Growth in emission transfers via international trade from 1990 to 2008. Proc Natl Acad Sci U S A 108(2):8903–8908
Reinaud J (2008) Issues behind Competitiveness and Carbon Leakage: Focus on Heavy Industry. IEA Information Paper, IEA/OECD, Paris
Samuelsohn D (2007) Trade Plan Opposed by China, Brazil and Mexico. Greenwire 26 Sep. http://www.earthportal.org/news/?p=507
Stanway D (2009) China Says "Carbon Tariffs" Proposals Breach WTO Rules. New York Times 3 July. http://www.nytimes.com/reuters/2009/07/03/world/international-uk-china-climate.html?ref=global-home
Swedish National Board of Trade (2004) Climate and trade rule – harmony or conflict?, Stockholm
The Economist (2008) Pollution Law: Trading Dirt. 5 June, pp 42–44
The Economist (2009) Green with Envy: The Tension between Free Trade and Capping Emissions. 19 Nov
General Agreement on Tariffs and Trade (1987) United States – Taxes on Petroleum and Certain Imported Substances. Report of the Panel L/6175-34S/136, Geneva. https://www.wto.org/english/tratop_e/dispu_e/87superf.pdf. Accessed 30 June 2015
General Agreement on Tariffs and Trade (1990) Thailand – Restrictions on Importation of and Internal Taxes on Cigarettes. Report of the Panel DS10/R-37S/200, Geneva. https://www.wto.org/english/tratop_e/dispu_e/90cigart.pdf. Accessed 30 June 2015
General Agreement on Tariffs and Trade (1994) United States: Restrictions on the Imports of Tuna. Report of the Panel DS29/R, Geneva. https://www.wto.org/gatt_docs/English/SULPDF/91790155.pdf. Accessed 30 June 2015
Wang X, Voituriez T (2009) Can Unilateral Trade Measures Significantly Reduce Leakage and Competitiveness Pressures on EU-ETS-Constrained Industries? The Case of China Export Taxes and VAT Rebates. Working Paper, Climate Strategies, Cambridge, United Kingdom
Werksman J, Houser T (2008) Competitiveness, Leakage and Comparability: Disciplining the Use of Trade Measures under a Post-2012 Climate Agreement. Discussion Paper, World Resources Institute, Washington, DC
World Bank (2007) International trade and climate change: economic, legal and institutional perspectives. World Bank, Washington, DC
World Bank (2010) World Development Indicators 2010. World Bank, Washington, DC

World Trade Organization (1998) United States – Import Prohibition of Certain Shrimp and Shrimp Products. Report of the Appellate Body, WT/DS58/AB/R, Geneva
World Trade Organization (2001) United States – Import Prohibition of Certain Shrimp and Shrimp Products – Recourse to Article 21.5 by Malaysia. Report of the Panel, WT/DS58/RW, Geneva
World Trade Organization, United Nations Environment Programme (2009) Trade and Climate Change: WTO-UNEP Report. World Trade Organization, Geneva
Xinhua Net (2014) Xie Zhenghua: China Likely to Put Forward Timing of Carbon Emissions Peak. July 15. http://news.xinhuanet.com/tech/2014-07/15/c_126755937.htm?prolongation=1 (in Chinese)
Zhang ZX (1998a) The economics of energy policy in China: implications for global climate change (new horizons in environmental economics series). Edward Elgar, Cheltenham UK & Northampton, MA, USA
Zhang ZX (1998b) Greenhouse gas emissions trading and the world trading system. J World Trade 32(5):219–239
Zhang ZX (1999) Should the rules of allocating emissions permits be harmonised? Ecol Econ 31 (1):11–18
Zhang ZX (2000) Can China afford to commit itself an emissions cap? An economic and political analysis. Energy Econ 22(6):587–614
Zhang ZX (2003) Why did the energy intensity fall in China's industrial sector in the 1990s? The relative importance of structural change and intensity change. Energy Econ 25(6):625–638
Zhang ZX (2004) Open trade with the U.S. without compromising Canada's ability to comply with its Kyoto target. J World Trade 38(1):155–182
Zhang ZX (2007a) Doing trade and climate policy together. In: Najam A, Halle M, Meléndez-Ortiz R (eds) Trade and environment: a resource book. International Institute for Sustainable Development, Canada, and International Center for Trade and Sustainable Development, Geneva
Zhang ZX (2007b) Why has China not embraced a global cap-and-trade regime? Clim Policy 7 (2):166–170
Zhang ZX (2008) Asian energy and environmental policy: promoting growth while preserving the environment. Energy Policy 36:3905–3924
Zhang ZX (2009a) Multilateral trade measures in a post-2012 climate change regime?: What can be taken from the Montreal Protocol and the WTO? Energy Policy 37:5105–5112
Zhang ZX (2009b) How should China respond to the U.S. proposed carbon tariffs? Int Pet Econ 17 (8):13–16
Zhang ZX (2010a) Copenhagen and beyond: reflections on China's stance and responses. In: Cerdá E, Labandeira X (eds) Climate change policies: global challenges and future prospects. Edward Elgar, Cheltenham UK & Northampton, MA, USA, pp 239–253
Zhang ZX (2010b) Is China a Christmas Tree to hang everybody's complaints? Putting its own energy-saving into perspective. Energy Econ 32:S47–S56
Zhang ZX (2011a) Assessing China's carbon intensity pledge for 2020: stringency and credibility issues and their implications. Environ Econ Policy Stud 13(3):219–235
Zhang ZX (2011b) In what format and under what timeframe would China take on climate commitments? A roadmap to 2050. Int Environ Agreements: Polit Law Econ 11(3):245–259
Zhang ZX (2012a) Who should bear the cost of China's carbon emissions embodied in goods for exports? Miner Econ 24(2–3):103–117
Zhang ZX (2012b) Competitiveness and leakage concerns and border carbon adjustments. Int Rev Environ Resour Econ 6(3):225–287
Zhang ZX, Assunção L (2004) Domestic climate policy and the WTO. World Econ 27(3):359–386

Law and Policy in Combating Greenhouse Gases in Japan

Mitsuo Matsushita

1 Legal Framework for Combating Greenhouse Gases (GHG) in Japan

1.1 An Overview of Laws in Japan on Environmental Protection and Emission Control

The legal system in Japan on environmental protection consists of laws and regulations on (a) the framework of regulation, (b) specific regulatory laws, (c) conservation laws, (d) laws of subsidies on and promotion for good environment and (e) laws on dispute settlement in environmental issues and indemnification of damages.

In 1993, the Environment Basic Law (the framework law) was enacted and this law enunciates three basic principles in protecting environment, e.g., the right to enjoy good environment and its continuation, the lessening of undue burden on environment, the maintenance of sustainable development and the promotion of international cooperation with a view to conserving a good global environment. This law is a framework law within which the government and other public authorities should enact and implement laws and regulations on environmental protection. This law declares the basic principles and directs the government and public authorities to put them into effect but does not provide for any specific measures to be enforced. In this sense, this law is regarded as "program law", i.e., a declaration of basic policies and principles.

M. Matsushita (✉)
Tokyo University, Tokyo, Japan

WTO Appellate Body, 6-27, 3 Chome Mukodaicho Nishi Tokyo Shi, Tokyo 188-0013, Japan
e-mail: mtm@dd.iij4u.or.jp

D.-Y. Park (ed.), *Legal Issues on Climate Change and International Trade Law*,
DOI 10.1007/978-3-319-29322-6_4

Article 6:1 of the Environment Basic Law directs the relevant agencies to establish desirable standards for the quality of air, water, soil and noise so that the health of people and the good environment for living are protected. Within this framework, various laws have been enacted to establish and implement environmental standards and emission standards of which two examples are given. The Water Pollution Law controls the standards that factories and other business entities must comply with and prohibit them from generating polluting substances in water above the stipulated level. Likewise the Air Pollution Law prohibits business installations from emitting polluting substances into air above a certain level as provided by that law. There are many other laws regulating environmental standards in different areas.

Article 24 of the Environmental Basic Law provides for recycling of materials and, under this provision, recycle laws have been enacted in 5 areas, e.g., automobiles, foodstuffs, construction, household electric appliances and packaging materials.

The specific laws to deal with global warming issues include, among others, the Anti-Global Warming Law, the Save Energy Law and several other laws. Among those, the Anti-Global Warming Law is most general and a brief account of this law follows. Enacted in 1998, this law provides for the basic program for reducing GHG emission and includes several provisions for implementing the Kyoto Protocol. However, this law does not impose legal obligations on the government and enterprises to take and execute measures to reduce emission of GHG except for the reporting duty of certain enterprises as designated as "specific enterprise" to report the amount of emission. Most provisions of this law set out objectives for reducing emissions and obligations on the part of the government and enterprises to strive for achieving such objectives. Therefore, obligations imposed on the government and enterprises are "obligation to strive" rather than execute and accomplish the results.

Article 22:1 of this law states that enterprises designated under this law as "specific enterprise" must make a program, either alone or jointly with other enterprises, to reduce GHG gasses and announce it publicly. Article 20-5 provides that specific enterprises must select production and other facilities so as to reduce emission of GHG as much as possible and announce such plans. Likewise Articles 20-6 and 21 provide that enterprises must make efforts to reduce emission of GHG when they produce, import and sell products used in daily life.

Another important law relating to emission control is the Save Energy Law. This law is designed to rationalize the use of energy in such areas as production, transportation, construction and use of machineries. In respect to production, the Ministry of Economic, Trade and Industries (the METI) must announce standards regarding such matters as heating, restoring used heat, transformation of heat to power, and prevention of loss of energy from cooling with a view to improving their efficiency.

In accordance with Article 15:1 of this law, enterprises designated by the law as specific enterprises must formulate a long term and medium term plan for accomplishing save energy. Such enterprises are required to report to the METI

the amount of energy used and this reporting duty includes report of emission of GHG.

If the METI decides that the use of energy of designated enterprises is improper, it can direct such enterprises to formulate and submit rationalization plan again and further direct them to implement appropriate measures if it decides that the enterprises have not fulfilled the program appropriately. If the designated enterprises did not comply with this directive, it is authorized to publish the fact of such non-compliance and ultimately issue an order to execute it.

In 2012, a law passed which imposes surcharge on commodity tax levied on oil, LPG-LNG and coal. Tax increase on those items will progress step-by-step during the period of 3 years since its enactment. This additional tax is used as resource to improve environment.

As seen above, the feature of laws in Japan dealing with global warming is that such laws generally do not directly impose on enterprises and other entities any legal obligation to reduce emission of GHG and require certain designated enterprises to make plan for the reduction of emission and report and publish the result. In this sense, such laws are characterized as "soft law" rather than hard law.[1] There is no law and regulation imposing quota on emission of GHG on business entities except for the fact that something akin to imposition of emission quota is exercised by a municipality (i.e., the Municipality of Tokyo). Therefore, in Japan, much depends on the initiative of private sectors (especially industries in production and transportation) to control and reduce emission of GHG.

1.2 Emission Trading

Although in Japan today there is no compulsory imposition of obligation to reduce emission and allocation of emission quota by the government (except for the program by Municipality of Tokyo which will be referred to later), the Ministry of Environment initiated in 2005 a program to meet the requirement of the Kyoto Protocol and, as part of it, started a voluntary scheme of emission trading. This scheme is called JVETS (Japan's Voluntary Emissions Trading Scheme). In this scheme, enterprises promise that they will reduce emission by certain amount which they promise to reduce. This scheme sometime provides subsidy to enterprises and sometime it does not depending on the conditions of reduction. The Ministry invites enterprises intending to join this scheme and emission trading is conducted by those enterprises which accomplished more than their target reduction and those which have not succeeded in reaching the goal. This scheme is designed to assist small and medium enterprises to tackle GHG issues. When small and medium enterprises accomplish reduction, credit will be sold to large

[1] Naoshi Ohtsuka: Kankyo Ho (Environmental Basic Act) (Yuhikaku 2010) presents a brief overview of the legal system on environmental law in Japan.

enterprises through this scheme. In this sense, this is part of small business promotion programs (Ministry of Environment 2014).

In 2008, the Municipality of Tokyo introduced a system for compulsory reduction of GHG to be imposed on installations located in the area of Tokyo. In this system, the owners and operators of large buildings (those which use energy calculated on the basis of consumption of oil above a certain kilogram) as designated by ordinance of the Municipality are required to reduce emission of GHG as specified by municipal ordinances. Emission trading system is provided for. Also an agreement between the Municipality of Tokyo and the Saitama Prefecture (an adjacent prefecture) has been agreed upon with a view to cooperating with each other in combating GHG. This is the first attempt to introduce compulsory emission control system in the country (Tokyo Metropolitan Government Bureau of Environment n.d.).

2 Initiative of Private Sectors in Coping with GHG

As stated above, initiative to control and reduce GHG largely rests in private sectors rather than the government. In connection with this, the role of the Japan Business Federation (Keidanren, hereafter referred to as "The Federation") is noteworthy. The Federation is a comprehensive economic organization with a membership of 1300 major companies of Japan, 121 nationwide industrial and trade associations and 47 regional economic organizations (as of July, 2013) and is the most powerful and influential economic organization in Japan.

The Federation is opposed to introduction of carbon tax and Cap & Trade system. The Federation points out, among other things, that, under the emission trading system, (a) Enterprises can meet the reduction target by purchasing credit without reducing emission; (b) This would be a disincentive against investing in R&D to develop technology useful for reducing GHG; (c) Production would be shifted to countries where the efficiency is lower; (d) The total emission of the whole world would not decrease; and (e) Border measures (import restrictions) would be necessary which is contrary to the principle of free trade. The Federation emphasizes that the Cap & Trade system leads to allocation of emission quota by the government (It argues that this is a "directed economy" rather than a free economy.), chills private initiative and it is impossible to allocate quota fairly and equitably. It claims that this will inevitably lead to "a big government", a symbol of inefficiency and high costs (Kenzai Koho Center 2012).

The Federation has been engaged in programs to reduce GHG since 1991 when it announced "The Charter for Earth Environment" in which it laid out programs to combat GHG. The Federation's program to combat GHG is called PDCA (Plan, Do, Check and Action) and consists of: voluntary plans formulated by participating industries to set the target reduction (Plan), their implementation by the participating industries (Do), report of the accomplishment to the assessment committee and government councils (Check) and review of accomplishment of each industrial

sector by the assessment committee and formulation of further actions to reduce GHG (Action). As part of this plan, the Federation announced "Commitment to a Low Carbon Society" (2013) according to which the following program is being promoted (Keidanren 2013).

Each industry through its trade association sets the target for reducing GHG in a certain period. The trade association formulates a program to accomplish the reduction to meet the target. It is the responsibility of that industry to plan measures to accomplish that target and the result is reported to the review committee established in the Federation and assessment is made. As of 1 November 2013, trade associations in 43 industries have formulated such plans which cover the major part of the whole industries in Japan and trade associations in 7 other industries have expressed their intention to participate in this project.

As a sample of such reduction plans, a summary of the project by the Japan Steel Industry Association in respect to the reduction program in crude steel production is given below.

If the total amount of production of crude steel is 119,660,000 tons in 2020, the GHG emission predicted in that year is 195,400,000 tons CO_2. The target is to reduce the amount of emission to 190,400,000 tons CO_2. If this is accomplished, it amounts to a reduction of 5,000,000 tons CO_2, e.g., 25 % reduction.

If the total amount of production of crude steel is 129,660,000 tons, the GHG emission in that year is 207,510,000 tons CO_2. The target is to reduce the amount of emission to 202,510,000 tons CO_2. It amounts to a reduction of 5,000,000 tons CO_2, e.g., 24 % reduction.

If the total amount of production of crude steel is 109,660,000 tons CO_2, the GHG emission in that year is 183,310,000 tons CO_2. The target is to reduce the amount of emission to 178,310,000 tons CO_2. It amounts to the reduction of 5,000,000 tons CO_2, e.g., 27 % reduction.

Of course, these figures are subject to variables such as ups and downs of economy, international circumstances and all other surrounding factors that affect businesses. If drastic changes occur in the economy and other circumstances of business, production and reduction targets must be modified.

One of the important means to accomplish the above results is an introduction of new advanced technology such as new technology in the production of next generation cokes, enhancement of efficiency in in-house generation of electricity, construction of new energy saving facilities and increase of chemical recycling of salvaged plastics, etc.

The figures of total production, emission and reduction are the average of figures presented to the Association by 90 companies which participate in the project. These reduction figures are limited to those that will be accomplished in Japan and do not include reduction that will be accomplished abroad through projects under the Joint Crediting Mechanism (which will be explained in Sect. 5).

Other trade associations have proposed reduction plans similar to the one in the steel industry. Overall the basic format for measures to reduce is similar to that of the Japan Steel Industry Association.

As stated above, these plans by the industries do not include projects that will be undertaken internationally under the Joint Crediting Mechanism. If credit procured through this mechanism is counted, the amount of reduction will be greater.

At this time, voluntary program as above discussed is going on in 114 industries and the emission from those industries covers about 80 % of the total emission in Japan. In 2012, the emission from those industries was reduced by 13.7 % compared with that in 1990 and we can say that this voluntary program has achieved a success to a certain extent.

3 The Kyoto Protocol and Japan

Initially Japan played an active role in formulating and establishing the Kyoto Protocol (UNFCCC 2007). The Kyoto Protocol Scheme was joined by 192 countries and this was an ambitious scheme. Under this scheme, 38 countries (developed countries) were obligated to reduce emission of GHG by certain degrees as designated by the United Nations while 154 countries (developing countries) were not obligated to any reduction. Japan was obligated to reduce GHG by 6 % based on the emission level of 1990. Beside emission quotas, the Kyoto Protocol provide for CDM (Clean Development Mechanism), JI (Joint Implementation) and GIS (Green Investment Scheme). In JI, public and business entities of developed countries engage in projects to reduce emission in the territories of the developed countries. The reduction of emission achieved is credited to the entities which undertook the project. In CDM, business entities of developed countries carry out projects to reduce GHG gasses in the territories of developing countries under the authorization of United Nations and reduction achieved through such projects is credited to the developed countries and their enterprises. GIS is a scheme whereby countries unable to accomplish the required emission reduction purchase credit from other countries which have accomplished reduction more than they are required and, as the consequence, have credit. The money thus paid is expected to be used to improve environmental project in that country.

The United States signed the Kyoto Protocol but refused to ratify it. So the United States is not obligated to reduce GHG according to the schedule as mandated by the United Nations.

However, by and large, the Kyoto Protocol Scheme has been proved to be ineffective. During the period from 1997 to 2010 in which the Kyoto Scheme was implemented, the total emission of GHG in the world increased from 22.7 billion tons to 30 billion tons. While the shares of developed countries (U.S., EU, Canada, Australia, Japan, etc.) in the total emission declined from about 50 % to 30 %, those of developing countries (especially China and India) increased conspicuously. One of the reasons for this unsatisfactory result is that the U.S. and China, the two top entities in emission of GHG, are not members of the Kyoto Protocol obligations and the shares of developing countries (non-members of the scheme of reduction) in the total emission have increased. In 2010, the U.S. shared

17.7 % and China shared 24.0 % of the total emission of GHG in the world, e.g., that those two entities which are not obligated to reduction under the Kyoto Protocol shared 41.7 % of the total emission in the world while the shares of countries obligated by the Kyoto Protocol reduction scheme in the same year amounted to only 15.6 % of the total emission in the world (International Energy Agency 2012).

In addition to this, the effectiveness of CDM has been somewhat hampered due to the fact that it takes a long time before the United Nations approves projects for CDM. It is reported that, on average, 2 years are necessary before a permission of the United Nations is granted after an application is made to engage in CDM project. No permission is given if a project is feasible as business, e.g., if enterprises can undertake it with a prospect of making profit from the project.

So far the United Nations has granted projects in which the scale of reduction of GHG is very big and more than 70 % of projects are concentrated in China partly due to the fact that the Chinese government has taken initiative to introduce CDM projects into China.

In light of this somewhat disappointing performance of the Kyoto Protocol and the fact that projects in which Japan has advantages (for example, high efficiency generation of electricity by coal and save energy products such as automobiles and household appliances, etc.) are generally not eligible for CDM projects, Japan decided to withdraw from this scheme as of the end of 2012.

In 2009, the Japanese government under the Prime Minister Hatoyama, announced that the government would commit itself to reducing GHG by 25 % from the level of the 1990 figure. However, in 2013, the Japanese government announced that it would withdraw this commitment of 25 %. The original 25 % target was based on the assumption that more nuclear power plants would be constructed and they would replace traditional power plants operated by fossil fuel such as coal, oil and natural gas. This has proven to be impossible due to the Fukushima Disaster. Construction of new nuclear power plants has become impossible and there are even big debates as to whether nuclear power plants should be abolished altogether. So the government announced that it would set a more modest figure of reducing GHG by 3.8 % from the level of the 2005 figure as the target (Asahi Shimbun Digital 2013).

It is projected, however, that Japan is able to accomplish the target reduction of GHG by 6 % based on 1990 figure which Japan promised in relation to the Kyoto Protocol. In 2012, the total emission of GHG in Japan was 1.341 billion tons which is the increase of 6.3 % compared with the standard year of 1990. However, if absorption of GHG by forests and credit acquired through CDM are counted, the average reduction during 2008 and 2012 is −8.2 % and the target of the Kyoto Protocol (−6 %) is accomplished.

4 COP-FCCC: From COP 15 to COP 19

As the end of implementing period of the Kyoto Protocol approaches, nations have begun discussing a subsequent framework. In order to establish a post-Kyoto international regime to deal with climatic change, in December 2009, nations agreed on the COP 15 ("The Copenhagen Accord", The Accord) (UNFCCC n.d.).

The Accord was not adopted by the participating nations but merely "noted", i.e., it was not binding on the participating nations. However, the participants acknowledged the existence of the Accord. The goal of the Accord was to keep an increase of the Earth temperature below 2 % degree Celsius from the time of the Industrial Revolution.

The following are the basic features of the COP 15. There are Annex 1 Parties (developed countries) and Non-Annex 1 Parties (developing countries). Annex 1 Parties commit themselves to accomplish individually or jointly targets for reducing emissions for 2020. Parties to the Kyoto Protocol strengthen the plans to reduce emission under the Protocol. Non-Annex 1 Parties implement "mitigation actions" and least developed countries and small island states may undertake voluntary actions. The Accord also recognizes the importance of coping with deforestation and forest degradation.

A fund is established from which financial assistance is given to developing countries. A collective commitment of developed countries is called for to provide resources for forestry and investments through international institutions. Recipients of such fund are developing countries and priorities are on least developed countries and small island states.

Developed countries provide USD 30 billion for 2010–2012 and commit themselves to a goal of providing jointly USD 100 billion annually by 2020. The fund is to be financed from public, private, bilateral and multilateral sources. A significant part of this fund should flow through "the Copenhagen Green Climate Fund". "The Technology Mechanism" is to be established which would facilitate transfer of technology to developing countries.

The participating parties "take note" of the Accord without being bound by it. Therefore, compared with the Kyoto Protocol, it is a weak regime. However, there are advantages that the Kyoto Protocol does not have. The United States joined the Accord. Developing countries participate in the regime by way of implementing mitigation actions whatever they may be.

Compared with the COP 15, the Kyoto Protocol is a centripetal system in which the authority is concentrated in the United Nations. In the COP 15, participating nations voluntarily undertake plans for reducing emissions. Compared with the Kyoto Protocol, the COP 15 is a centrifugal system. There is no unilateral imposition of quota for emission reduction by an international organization. Parties voluntarily propose their plans. However, a somewhat loose and flexible approach as represented by COP 15 may be the only practical way to make progress. Progress may be slow and piecemeal. However, this loose system may reflect the reality of

international politics and produce some results and some results are better than no result (Matsushita 2010).

As stated earlier, in implementing the COP 15, Annex 1 Parties will carry out reduction programs domestically and Non-Annex 1 Parties will carry out mitigation actions.

The COP 15 states that Annex 1 Parties implement *individually or jointly* programs for reduction of GHG. This suggests that Annex 1 Parties can enter into an agreement to carry out a project envisaged in Joint Implementation (JI) in the Kyoto Protocol. Likewise this suggests that an Annex 1 Party can enter into a Clean Development Mechanism (CDM) type agreement, e.g., an agreement with a Non-Annex 1 Party whereby the former invests and transfers technology in the latter in the areas related to GHG reduction and promotion of environment-related industries in the latter. This suggests also that Annex 1 Parties and Non-Annex 1 Parties can enter into agreements whereby the governments and businesses of Annex 1 Parties cooperate with each other in providing assistance to a Non-Annex 1 Party.

The above described ideas have been accepted in the successive COP conferences and additions and modifications were made. In COP 17 (2011), the participants decided that, in COP 21 (2015), a future framework to deal with climate change would be formulated and agreed and this new framework would take effect from 2020. The United States proposed that each participant should propose a voluntary target while taking into account peculiar circumstances of each country and that there should be a mechanism through which such target would be examined and certified. Many developed countries and some developing countries joined this proposal.

The Japanese government insisted that all of the countries join the program and major countries (U.S., China, India, Korea, Japan, etc.) should have equivalent obligations, that each country should voluntarily propose the target for reduction taking into account special circumstances of each country ("bottom-up approach") and that each participant should take policies for developing technology for the low carbon society.

In COP 18 (2012), it was acknowledged that: "Parties, individually or jointly, may develop and implement various approaches, including opportunities for using markets and non-market to enhance the cost-effectiveness of, and to promote, mitigation actions, bearing in mind different circumstances of developed and developing countries;. . . ." (underline added) This clearly authorizes bilateral agreements between Parties to engage in a joint program to reduce GHG. This is, in fact, the concept of Joint Credit Mechanism (JCM) which will be discussed and which the Japanese government emphasizes.

In COP 19 (2013), it was agreed that all Parties initiate or intensify domestic preparations for their intended nationally determined contributions. The Parties agreed that, by COP 20 (2014), they would specify information that each Party would put into its intended contribution. They further agreed that developed country Parties, the operating entities of the financial mechanism and any other organizations in a position to provide support for the related activities increase

technology, finance and capacity-building support to enable increased mitigation ambition of developing country Parties.

From the above, one can see that there are several distinct features of decisions made in COP conferences which differentiate them from the requirement of the Kyoto Protocol. First of all, commitments made in those conferences are by and large voluntary and no legal obligation is involved such as there is in the Kyoto Protocol.

Secondly, unlike the Kyoto Protocol, all of the Parties participate in one way or another. Generally developed country Parties commit themselves to reducing emission of GHG by certain degrees as proposed by them. Developing country Parties present their mitigation plans. What such mitigation plans are not specifically decided yet. However, they will engage in activities which will contribute to reduction in some ways.

Thirdly this scheme is a "bottom-up" scheme rather than "a top down" scheme as represented by the Kyoto Protocol.

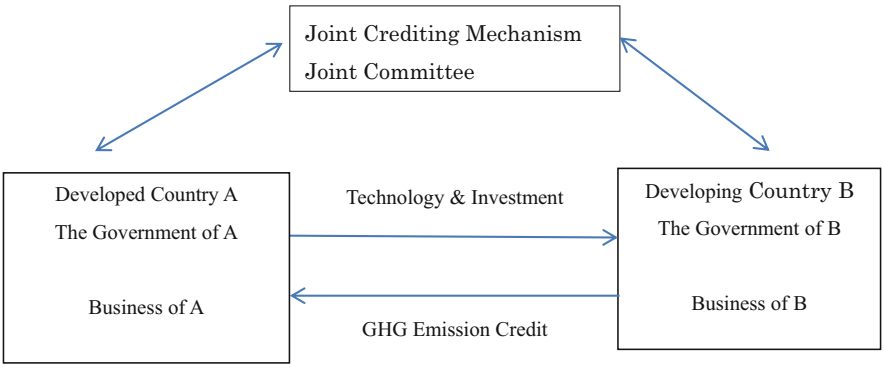
Fourthly the scope of discretion on the part of the Parties and their enterprises is much wider than those in the Kyoto Protocol.

5 Joint Crediting Mechanism (JCM) and Bilateral Offset Credit Mechanism (BOCM)

One of the important features of COP approaches is the concept of bilateral or plurilateral agreement on carbon credit system. The Kyoto Protocol stipulates that, in the initial period (2008–2012), the members that made commitment to reduce emission of GHG are obligated to reduce GHG according to the plan as directed by the United Nations. The second period of reduction plan under the Kyoto Protocol expires in 2020. Internationally agreed plans for reducing GHG under the authorization of the United Nations will expired then. Until that time, trading nations negotiate in COP Conferences as to what policies and scheme should be taken for GHG reduction. So negotiations for new schemes have continued from COP 15 to COP 19 and will continue to COP 20 (2014) and further. By COP 21 (2015), negotiating Parties should decide a post-Kyoto scheme and this new scheme should take effect in 2020. Whether or not and how much successful these new plans will be is uncertain yet and premature to predict.

Meanwhile new ideas have been proposed in the COP conferences. One of such ideas is that of bilateral and plurilateral environmental agreement and crediting system. This system is called the Joint Crediting Mechanism (JCM) and Bilateral Offset Credit Mechanism (BOCM). The idea is to create the following new scheme for reducing GHG.

Two nations or more nations agree through environmental and trade agreement on a joint reduction of GHG (This may be a bilateral, regional or plurilateral agreement.) and a mutual crediting of reduction and application of such credit



Governments of A and B agree on reduction of GHG. Businesses in A apply projects to JCM and JC. JCM and JC approve the project and the business invests in and transfer technology to Country B alone or jointly with business in Country B in environmental industries. Governments of A and B provide financial assistance, investment guarantee and other aids. In this way, investment and related resources are transferred to Country B and reduction of GHG is achieved.

GHG reductions achieved through this project can be used by Country A to fulfill its obligation or target to reduce to reduce GHG.

Fig. 1 The concept of joint crediting mechanism

against the obligation of the contracting Parties to reduce GHG. This scheme is not allowed under the Kyoto Protocol. However, as stated earlier, in COP 15 to COP 19, this concept has been discussed and has been incorporated into the COP scheme. This scheme is to supplement the CDM under the Kyoto Protocol (Ministry of Environment 2013). This scheme is regarded as a temporary measure which will last until the new scheme for GHG reduction is agreed upon. However, whether such a new scheme will be established is up in the air now. There may not be any new effective multilateral scheme. Then this scheme may last longer than it was originally planned.

Hypothetical situations for this bilateral or plurilateral agreement can be illustrated by Fig. 1.

Under the agreement between the governments of A and B, GHG reduction accomplished through this project can be credited to the government of A (and the government of B also) and the enterprise which undertook the project. The credit acquired through this process can be credited against the commitment or target for reduction of GHG by the government of A and/or the enterprise in question.

In the above diagram, only two government and businesses participate. However, there may be situations where more than two governments and businesses participate. Then there should be a more detailed arrangement as to which party will get how much credit and so on. If a participating government and business are not committed themselves to GHG reduction, they will not get carbon credit and they

will receive royalty on the technology which they licensed the others or receive dividends on profit or compensated in some other ways.

This scheme emphasizes the importance of initiatives on the part of private enterprises and is, therefore, more "business friendly" scheme as compared with that under the Kyoto Protocol.

6 The Program of the Japanese Government in the Joint Credit Mechanism

JCM has been given a high priority in the Japanese environmental policy in relation to combating GHG. Japanese industries have achieved a high degree of efficiency in reducing GHG in their activities since 1980s and there is not much room for reducing GHG coming from industrial activities. The major sources of GHG in Japan now are transportation and households and it is more difficult to reduce GHG in such areas. In light of this situation, the Japanese government has put much emphasis on procuring credit on GHG from oversea sources to meet the requirement of its commitment.

The basic principles of JCM as enunciated by the Japanese government are shown below (METI 2013).

(a) In a bilateral JCM program, the Joint Committee (JC) is composed of representatives of the governments of both Parties.
(b) JC approves or rejects proposals by enterprises.
(c) JC designates a third review board which undertakes review of proposed projects and issue certificate of their validity.
(d) JC registers projects which have been validated by the review board.
(e) Each government of the Parties keeps the registry.
(f) Upon request of JC, the governments of the Parties issue credit.
(g) The Parties make sure that credit is not double-counted in any other accrediting body.

Under current JCM system, credit thus granted is not tradable at the initial period. However, negotiations will be held between the Parties with a view to converting the credit system to a tradable one in an early period.

The Japanese government has been promoting to conclude JCM agreements with foreign governments and so far has agreed on such agreement with eleven countries, e.g., Indonesia, Ethiopia, Vietnam, Mongolia, Bangladesh, Kenya, Malaysia, Maldives, Costa Rica, Republic of Palau and Cambodia. Negotiations are proceeding with: Thailand, India, Saudi Arabia, Mexico, Senegal and Sri Lanka. Many projects have been approved under JCM agreements and, from among them, some examples are given below (Government of Japan 2014).

With Mongolia: Improvement of electric transmission network and power plants using coal (2013); building of power pants using wind power and building of efficient boilers for heating in winter (2013)
With Malaysia: Introduction of improved air-conditioning system in office building (2010); introduction of technology on bio-fuel (2010); promotion of solar energy at homes (2011)
With Vietnam: Improvement of power plant using coal (2011); introduction of nuclear power plant (2011); introduction of high efficiency transmission system (2011)
With Indonesia: Improvement of power plant using coal (2010); construction of geothermal power plant (2010); use of palm oil waste for power plant (2011); reforestation (2011).
With Thailand: Introduction of solar-energy air-conditioning system (2011); smart grid control system by information technology in factories (2011)
With Philippine: Geothermal power plant (2010); introduction of energy-saving technology in steel production (2010)

7 Future Issues

7.1 Emission Market

As mentioned above, JCM starts as a scheme in which credit is not tradable. However, it is stated also that, in future, it is expected to be turned into a tradable credit system. When it is tradable, there is a possibility of transacting credit in emission market. Emission market may be limited to the markets in two or several Parties which participate in a JCM program. However, it makes more sense if credit can be sold and bought in a larger market. In this respect, it is noteworthy that, in the EU-ETS (European Union-Emission Trading System) and U.S. legislative proposals regarding climate changes, a possible linkage with other emission markets is noted.

The EU-ETS states that credit acquired in other market can be used in the EU-ETS on the basis of an agreement with a third country where that credit is issued and this arrangement includes a bilateral agreement between the EU and a third country (Veel 2009). The Bills proposed to the U.S. Congress provided that credit overseas can be used in the United States (international credit) (America's Climate Security Act 2007; American Clean Energy and Security Act 2009). In these Bills, international credit could be recognized on the condition that the other Party is a developing country which entered into a bilateral agreement with the United States or a developing country where the credit in question satisfied the requirements of the Bill, provided the ways credit would be distributed meets the U.S. standards and such transactions are amenable to the legal process under U.S. federal laws in case where a dispute arose between parties to credit

transactions. Although the U.S. Bill did not pass the Congress, it will be used as a model or pattern in future legislation on climate changes. Another potential issue is whether emission trading is included in trade in services. At this time, the legal nature of carbon credit is not clearly defined and we do not know what kind of legal right is involved. Also emission right is not included in the list of services prepared by the GATT/WTO Secretariat (WTO 1991). However, if carbon credit is tradable, it is the subject of transactions in emission market and it carries with it a certain financial value. The Appendix to the GATS in financial market refers to tradable financial asset as a subject matter of the GATS and this raises a question as to whether or not carbon credit could be included in financial assets. If carbon credit is subject to the disciplines of the GATS, GATS provisions apply depending on the liberalization commitments of the Parties in question. At this time, views of commentators are divided and none of them points to a definite and clear solution yet (Werksman 1999; Wiser 2002; Jinnah 2003). However, there may be a time in future when this is a viable issue.

Although this may seem a remote possibility at this time, it is useful to begin studying issues involved in linking emission markets in this regard.

7.2 Convergence of Emission Control Policy

One of the premises of introducing international emission market is that emission control policy and environmental protection at large of the participating countries are reasonably similar and compatible. To introduce international emission market, some degree of equivalency or similarity between the environmental measures of participating Parties is necessary in order that an international linkage of emission markets operates. What that convergence in environmental rules among the participating Parties might be is important and difficult question. If there is too much divergence between the Parties with respect to the stringency or laxity in controlling emission, credit will be more easily produced in the market of a Party where the control is less stringent than that of the other where the control is tougher and credit will be "dumped" into the other market thereby devaluing credit in that market and eventually lowering the level of control there. Some mechanism is necessary to prevent this "dumping" from happening.

7.3 Subsidies

In order to promote ventures under the umbrella of JCM, the participating governments will provide subsidies to enterprises which undertake the ventures in many different forms. This will involve providing of money or financing at favorable interest rates. This favorably affects competitiveness of the enterprises which benefit from this subsidy. Problems could arise in relation to the SCM Agreement

which prohibits not only export subsidy but also actionable subsidy and subsidies given to domestic industries engaged in environmental activities could be challenged by other governments as such. It will be necessary to formulate guidelines so that subsidies to promote JCM ventures do not come into conflict with the SCM Agreement. Subsidies provided for environmental purposes were classified as "non-actionable subsidy" in the original texts of the SCM Agreement. It was made subject to review 5 years after the coming into being of the WTO Agreements to decide whether this treatment should be continued. However, unfortunately WTO Members could not reach an agreement on this and this provision lapsed. It may be a good idea to reconsider matter with a view to resurrect it (Petsonk 1999; Werksman 1999).

7.4 Border Measures: BTA (Border Tax Adjustment)

When governments engage in bilateral, regional, plurilateral or multilateral agreements to reduce GHG and to control emission in their respective territories, border measures to prevent carbon leakage will be necessary in order to avoid shifting of production from the participating countries where stringent measures are enforced to control emission to countries where control is more lax. This involves the question of whether or not GATT Article II: 2 (border tax adjustment) should be introduced to implement JCM projects and whether or not Article XX: (g) together with Chapeau (exemption from GATT disciplines of measures relating to the conservation of exhaustible natural resources) are applicable to measures taken by participating Parties of JCM programs. This is a very big and controversial problem. However, if one wishes to construct an international trade system in which emission control policies and GATT disciplines walk side by side in a friendly discourse, it is essential to resolve this problem.[2]

References

Air Pollution Law (Taikiosen Boshiho). Law 97 (1968)
America's Climate Security Act. S.2191 110th Cong (2007)
American Clean Energy and Security Act. H.R. 2454 111th Cong (2009)
Anti-Global Warming Law (Chikyu-ondanka Taisakuho). Law 117 (2010)
Environmental Basic Act (Kankyo Kihonho). Law 91 (1993)
Government of Japan (2014) Recent development of the joint crediting mechanism (JCM). http://www.env.go.jp/earth/ondanka/mechanism/bilateral/attach/jcm-bocm_trend1401_2.pdf. Accessed 6 April 2015

[2] On environmental law aspects of border tax adjustment, see Schoenbaum (1997), Pitschas (1995), and WTO (1970, 1997).

International Energy Agency (2012) CO_2 emission from fuel combustion 2012. International Energy Agency, Paris
Jinnah S (2003) Emissions trading under the Kyoto Protocol. Georgetown Int Environ Law Rev 15:740–742
Keidanren (2013) Keidanren's commitment to a low carbon society. http://www.keidanren.or.jp/en/policy/2013/003.html. Accessed 17 Feb 2015
Kenzai Koho Center (2012) Keidanren's stance and opinion on domestic efforts for global warming. http://www.kkc.or.jp/ondanka/kikou-hendou/page1_4.html. Accessed 17 Feb 2015
Matsushita M (2010) Some issues of environmental measures in the context of WTO disciplines. Korea Univ Law Rev 8(Fall):81–101
Ministry of Economy, Trade and Industry (2013) Bilateral Offset Crediting Mechanism (JCM/BOCM) in Indonesia and Vietnam. http://www.meti.go.jp/press/2012/02/20130219001/20130219001.pdf. Assessed 28 April 2015
Ministry of Environment (2013) Bilateral Offset Crediting Mechanism (JCM/BOCM). https://www.env.go.jp/council/06earth/y060-113/mat04.pdf. Accessed 28 April 2015
Ministry of Environment (2014) The emission reduction of Japan Voluntary Emission Trading Scheme in the Stage 7. https://www.env.go.jp/press/press.php?serial=17616. Accessed 17 Feb 2015
Petsonk A (1999) The Kyoto Protocol and the WTO: integrating greenhouse gas emission allowance trading into the global market place. Duke Environ Law Policy Forum 10:185–220
Pitschas C (1995) GATT/WTO rules for border tax adjustment and the proposed European directive introducing a tax on carbon dioxide emissions and energy. Georgia J Int Comp Law 24:479–500
Save Energy Law (Enerugi-riyo Go-rikaho). Law 49 (1979)
Schoenbaum TJ (1997) International trade and protection of the environment: the continuing search for reconciliation. Am J Int Law 91(2):268–313
The Asahi Shimbun Digital (2013) Reduce greenhouse emissions by 3.8% below the 2005 levels by 2020. http://www.asahi.com/articles/TKY201311150046.html. Accessed 28 April 2015
Tokyo Metropolitan Government Bureau of Environment (n.d.) Tokyo cap and trade. http://www.kankyo.metro.tokyo.jp/en/climate/cap_and_trade.html. Accessed 17 Feb 2015
United Nations Framework Convention on Climate Change (2007) Uniting on climate: a guide to a climate change and the Kyoto Protocol. http://unfccc.int/resource/docs/publications/unitingonclimate_eng.pdf. Accessed 6 April 2015
United Nations Framework Convention on Climate Change (n.d.) Copenhagen Accord. http://unfccc.int/meetings/copenhagen_dec_2009/items/5262.php. Accessed 6 April 2015
Veel PE (2009) Carbon tariffs and the WTO: an evaluation of feasible policies. J Int Econ Law 12 (3):749–800
Water Pollution Law (Suishitsu Odaku Boshiho). Law 138 (1970)
Werksman J (1999) Greenhouse gas emissions trading and the WTO. Rev Eur Community Int Environ Law 8(3):251–252
Wiser G (2002) Frontiers in trade: the clean development mechanism and the general agreement on trade in services. Int J Glob Environ 2(3/4):288–309
World Trade Organization (1970) Report by the working party on border tax adjustment. https://www.wto.org/gatt_docs/English/SULPDF/90840088.pdf. Accessed 6 April 2015
World Trade Organization (1991) Services sectorial classification list. https://www.wto.org/english/Tratop_e/serv_e/mtn_gns_w_120_e.doc. Accessed 6 April 2015
World Trade Organization (1997) Taxes and charges for environmental purposes – border tax adjustment. Note by the Secretariat WT/CTE/W47, Geneva. https://docs.wto.org/dol2fe/Pages/FE_Search/. . ./6608/Q/. . ./W47.pdf. Accessed 6 April 2015

Taiwan's Climate Change Mitigation Policies and Their Potential Interaction with the WTO Rules: Focusing on Economic Incentive Measures

Wen-Chen Shih

1 Introduction

Taiwan makes no small contribution to the increasing global greenhouse gases (GHGs) emissions due to its industrial and economic structure. According to the statistics published by the International Energy Agency (IEA), Taiwan ranks 23rd in terms of her total CO2 emissions from fuel combustion in 2011 (IEA 2013, pp. 48–51). In terms of CO2 emissions per capita, Taiwan ranks 24th world-wide and 11th in Asia (Taiwan's Environmental Protection Administration Executive Yuan 2014a, b). According to Taiwan's 2nd National Communication under the United Nations Framework Convention on Climate Change (UNFCCC),[1] total net GHGs emissions increased from 128,406,000 tons of carbon dioxide equivalents in 1990 to 264,707,000 tons in 2008, with emission increased by 106.15 % and average annual growth rate of 4.46 % (Taiwan's Environmental Protection Administration 2012, p. 35). On the other hand, as an island state that is prone to natural disasters such as typhoons and earthquakes, Taiwan is particularly vulnerable to the impact of climate change. Nearly two-third of the island is mountains and there are as many as 119 rivers. Due to this unique geographical landscape and uneven seasonal distribution of rainfall, disaster often arises following extreme heavy rainfall, which becomes more frequent as a result of climate change. Furthermore,

[1] Taiwan is not a contracting party to the UNFCCC and is not obligated to issue National Communication as required by Article 12 of the UNFCCC. Nevertheless, Taiwan's Environmental Protection Administration, following the Reporting Guidelines for Annex I and Non-Annex I parties of the UNFCCC, has issued two editions of National Communication in 2002 and 2011.

W.-C. Shih (✉)
Department of International Business, National Cheng-chi University, 64, Sec. 2, Zhi-Nan Road, Taipei 11605, Taiwan
e-mail: wcshih@nccu.edu.tw

D.-Y. Park (ed.), *Legal Issues on Climate Change and International Trade Law*,
DOI 10.1007/978-3-319-29322-6_5

with coastline stretches as long as 1200 km and surrounded by more than 120 small islands, Taiwan is even more at risk if sea level rises to an unsustainable level.

With this distinctive combination, it might be expected that Taiwan should be making every effort to mitigate her GHGs emissions and to adopt a comprehensive set of adaptation strategies and plans. The reality is that, as of 2015, Taiwan does not yet have a legally binding GHGs reduction commitment both internationally and domestically. In the case of the former, Taiwan is not a contracting party, let alone Annex I party, to the UNFCCC. In the case of the latter, the current President has set the goal of stabilizing Taiwan's GHGs emissions at 2008 levels by 2020 as his campaign pledge. But this commitment has not been incorporated in any existing or proposed legislations. Legislative framework is also lacking for regulating the emissions of GHGs, including CO2. Proposed legislation, for example, the draft Greenhouse Gas Reduction Act, focuses only on mitigation, but not adaptation. Without a clear and firm GHGs emissions reduction commitment, prior to 2015, Taiwan's government has been dealing with climate change mitigation and adaptation concerns by a variety of policy tools that do not necessarily have the adequate legislative authorization. In addition, emissions from the energy sector accounts for 66.42 % of CO2 emissions from fuel combustion in 2008 (Taiwan's Environmental Protection Administration 2012, p. 38). Therefore, energy-related policies and laws, such as those relating to the promotion of renewable energy and energy efficiency, are identified by the government as within the broader policy and legal framework to deal with climate change.

All these factors have led to the current patchy policies and laws relating to probably the most important environmental challenge facing Taiwan. However, as patchy and incomprehensive as it now stands, major policy tools does have been identified and/or used by Taiwan in her mitigation policies. According to the joint report by the World Trade Organization (WTO) and the United Nation Environmental Programmes (UNEP), national policies to mitigate and adapt to climate change can be categorized into three major types: price and market mechanisms, financial mechanisms, and technical requirements.[2] All types of polices have been used or are expected to be adopted by Taiwan. By using the WTO/UNEP categorization, this paper will present a brief overview on Taiwan's climate change and related energy policies and laws, focusing on the first two categories of economic incentive measures.

In addition to consider the effectiveness and efficiency of these policy tools on Taiwan's response to climate change mitigation and adaptation, the government also needs to pay attention to her international obligations as a Member to the WTO. After identifying the adopted and proposed climate change and related energy policies and laws, this article will offer a preliminary analysis on whether these policies fall within the WTO rules and, if they do, the compatibility with the relevant WTO rules.

[2] WTO/UNEP (2009), Part IV.

2 Taiwan's Climate Change and Energy Policies and Laws: An Overview

A few countries, such as the United Kingdom[3] and Mexico,[4] have adopted specialized climate change legislations. Others, such as the European Union (EU),[5] have adopted comprehensive and dedicated policy framework, with various supporting legislation, to address climate change concerns. As of mid-2016, Taiwan has neither a specialized legislation nor a dedicated policy framework to deal with climate change mitigation and adaptation concerns. This Part will provide an overview on the most relevant policies and laws, both existing and in draft, and the agencies in charge to deal with climate change in Taiwan.

2.1 Overview of the Current Policy and Legal Framework

In the "2002 Basic Environment Act", Article 21 states that: "Government entities at all levels shall actively adopt measures to control carbon dioxide emissions and establish related plans to mitigate the greenhouse effect." The National Council for Sustainable Development, an inter-ministerial body under the Executive Yuan, was set up under the mandate of Article 28 of the Basic Environment Act. The Council established the "Carbon Reduction and Climate Change Working Group", hosted by the Environmental Protection Administration (EPA), as the main platform to respond to climate change issues in 2008. In an attempt to strengthen cross-department coordination, the Executive Yuan founded the "Energy Saving Carbon Reduction Promotion Commission", hosted by the Bureau of Energy, Ministry of Economic Affairs (MOEA), in 2010.

The most relevant policy framework is the "2010 National Energy Saving Carbon Reduction Plan" (the "2010 Plan"), published by the Executive Yuan's Energy Saving Carbon Reduction Promotion Commission in March 2010. According to Taiwan's 2nd National Communication, this Plan provides "the overall policy guideline for Taiwan to respond to climate change issues." (Taiwan's Environmental Protection Administration 2012, p. 56). The "2010 Plan" contains 10 benchmark programmes that cover energy saving and GHGs emission reduction. However, it does not contain any specific target and timetable in terms of GHGs

[3] United Kingdom adopted the "Climate Change Act" in 2008. For full text, see: http://www.legislation.gov.uk/ukpga/2008/27/contents.

[4] Mexico adopted the "General Law on Climate Change" in 2012. For full text, see: http://www.encc.gob.mx/en/documentos/general-climate-change-law.pdf.

[5] EU has adopted various policy frameworks, such as the "2020 climate and energy package" and the "2030 framework for climate and energy policies", on climate change and energy issues to provide guidance to the subsequent European legislation. See: http://ec.europa.eu/clima/policies/brief/eu/index_en.htm.

reduction commitment. Another relevant policy framework is the "2008 Sustainable Energy Policy Guidelines" (the "2008 Guidelines"), which is approved by the Executive Yuan in June 2008. In the "2008 Guidelines", several goals relating to energy efficiency and CO2 emission reduction are specified. In terms of CO2 emission reduction, the "2008 Guidelines" sets the goal of returning to the 2008 level between 2016 and 2020, and further reduced to the 2000 level by 2025 (Ministry of Economic Affairs 2008). This goal is partly in line with the campaign pledge of the current President. However, it does not seem to be a binding target for the following two reasons. First, such type of policy guidelines does not have the same legal status as legislation under Taiwan's legal framework. Second, as the next sub-section will show, the draft GHGs Reduction Act does not lay down any GHGs emissions reduction timetable and target.

In terms of legislative framework, the first benchmark programme in the "2010 Plan" is "building a sound regulatory system" and four pieces of legislation are identified as crucial for Taiwan to cope with climate change issues: GHGs Reduction Act (draft), Renewable Energy Development Act, Energy Administration Act 2009, and Energy Tax Bill (draft) (Taiwan's Environmental Protection Administration 2012; Gao 2013). The Renewable Energy Development Act was passed by the Legislative Yuan in June 2009 and the Energy Management Law was amended and passed by the Legislative Yuan in June 2009 as well. However, the other two important legislations, the draft GHGs Reduction Act and the draft Energy Tax Bill, have yet to be adopted by the Legislative Yuan. As of mid-2016, in terms of agencies in charge, the MOEA are the lead agency for the Renewable Energy Development Act and the Energy Management Law. The Bureau of Energy in the MOEA is in charge of laying down detailed regulations concerning the enforcement of the Renewable Energy Development Act, including the operations of the feed-in tariff (FIT) programme and the Renewable Energy Development Fund (Bureau of Energy 2014a, b; Gao 2012). The EPA is the agency in charge for the draft GHGs Reduction Act. And the Ministry of Finance (MOF) is the agency in charge for the draft Energy Tax Bill. In addition to be tasked with legislative initiatives and implementation, both the EPA and MOEA serve as secretariats to two inter-ministerial bodies, the "Carbon Reduction and Climate Change Working Group" and the "Energy Saving Carbon Reduction Promotion Commission", as mentioned in the previous paragraphs.

In addition to the above-mentioned four existing or proposed laws, Taiwan's EPA also published several agency-level regulations regarding GHGs emissions reporting requirements and relating to the forth-coming emission trading system as contemplated in the draft GHGs Reduction Act. However, as the draft GHGs Reduction Act has yet to be passed by the Legislative Yuan, regulations concerning the operation of the yet-to-be-legally-established emission trading system do not have the necessary legal mandate. This of course raises concerns regarding the legality of these early regulatory actions taken by the EPA. To begin with, all six GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride) identified under Annex A to the Kyoto Protocol were not regarded as "air pollutant" under Taiwan's "Air Pollution Control Act"

and "Air Pollution Control Enforcement Rules" before 9 May 2012. As GHGs were not "air pollutant" under the existing legal framework, the EPA did not have the legal authority to require enterprises to report GHGs emission data. On the other hand, several controversial development projects have been required to reduce their GHGs emissions as part of the legal condition to pass the environmental impact assessment (EIA) review process. Considering the fact that GHGs were not "air pollutant" under the then existing legal framework, some flexibilities were granted to these developers in meeting their GHGs reduction commitments. In addition to reducing their GHGs emission on-site, they can also use emission reduction credits generated overseas and domestically, provided that these credits are approved by Taiwan's EPA. In an attempt to obtain more legal authority to regulate GHGs, the EPA officially designated these six GHGs as "air pollutants" according to Article 2, subparagraph 6 of the Air Pollution Control Act in 9 May 2012. With this move, the EPA has acquired the necessary legal authority to regulate GHGs emissions, including requesting certain enterprises to report their GHGs emissions data. Subsequently, the EPA promulgated two regulations concerning mandatory GHGs reporting according to Article 21 of the Air Pollution Control Act in December 2012.

On the other hand, the EPA published the "EPA's Principles of Promoting GHGs Early Action Project and Offset Project" (the "Principles") in 10 September 2010 to encourage voluntary emissions reduction actions and projects undertaken by some enterprises (Taiwan Environmental Protection Administration 2010, n.d.). This policy is also used to assist developers with EIA commitment to reduce GHGs emissions by providing them with the mechanisms to generate verified emissions reduction credits that can be used by these developers to fulfil their EIA commitments. Under this "Principles", enterprises meeting certain requirements can obtain emissions reduction credits generated from two types of activities: the early action project and offset project. The "Principle" lays down detail rules regarding the application and review procedures for granting such emissions reduction credits. The emissions reduction credits obtained under this "Principles" can be used by the developers to meet their EIA commitments, or to offset any domestic emissions that are voluntarily undertaken. The early action project generates credits from the differences between an enterprise's actual emissions intensity and the designated emissions intensities published by the EPA on a sectoral or industrial basis. The following five industries have had their emissions intensities designated by the EPA as of Jan 2014: cement, semiconductor, power general, steel and iron, and TFT-LCD. The offset project operates very similarly to the Clean Development Mechanisms (CDM) of the Kyoto Protocol. The credits generated under this "Principles" can either be used to meet EIA commitments, which are legal requirements under the EIA Act, or to be sold to other enterprises. Considering the fact the credits generated have such legal or monetary value, the EPA should acquire proper legal authority to publish this "Principles". This "Principle" operates on the assumption that an emissions trading system will be put in place once the draft GHGs Reduction Act is passed by the Legislative Yuan. However, the draft GHGs Reduction Act has yet to be adopted as of mid-2016. This renders the legality of this "Principles" in great doubt.

2.2 Proposed Legislations and Current Development

After identifying the current policy and legal framework on climate change mitigation, this sub-section will briefly introduce two important but yet-to-be-adopted legislations in Taiwan, as of mid-2016, the draft GHGs Reduction Act and the draft Energy Tax Bill.

The most important legislation regarding Taiwan's climate change mitigation is the draft GHGs Reduction Act. The draft GHGs Reduction Act was first drafted by the EPA and approved by the Taiwan Environmental Protection Administration Executive Yuan in 2006. The draft was then submitted to the Legislative Yuan in 29 Dec. 2006. Different versions of GHGs Reduction Act were also drafted by various legislators since 2006 and there are five different drafts, including the one drafted by the EPA, that are concurrently being discussed in the Legislative Yuan. The draft GHGs Reduction Act passed the first reading in 6 April 2012 and was submitted to the "Social Welfare and Environmental Hygiene Committee" for further discussion and review. As of August 2014, no further discussion or review concerning the draft GHGs Reduction Act has been scheduled in the Legislative Yuan. After nearly 8 years, this crucial legislation concerning Taiwan's climate change mitigation policies remains a draft. This demonstrates the controversies of the adoption of the GHGs Reduction Act in Taiwan. It also implies that climate change is not one of the priorities in the government's policy agenda.

The draft GHGs Reduction Act does not lay down specific target and timetable for Taiwan's GHGs emissions reduction. The Act requires designated emissions source to report GHGs emissions data and comply with GHGs performance standards. But the Act delegated the regulatory authorities to the EPA to set the criteria for emission source designation and levels of performance standards. A combination of cap-and-trade and baseline-and-credit emissions trading system is contemplated as the major policy tool in the draft GHGs Reduction Act (Shih 2012). The Act also delegated the regulatory authorities to the EPA to lay down detailed rules concerning the operations of the emission trading systems. As the previous sub-section pointed out, the baseline-and-credit trading system is already in place after the EPA published the "Principles" in 2010. As for the cap-and-trade system, the Act authorizes the central competent authority, the EPA, to set the cap following the international GHGs reduction timelines as established by the UNFCCC, the Kyoto Protocol and resolutions of the relevant conferences or meetings. In addition, this cap should be set only after detailed rules of GHGs emissions inventory, reporting, verifications, and cap-and-trade systems are published by the EPA. Most, if not all legislations, whether at the international, regional, national, or subnational level, establishing emissions trading market explicitly set out target and timetable for GHGs emissions. By delegating the power to an administrative body to set a country's overall GHGs emissions reduction target, Taiwan's draft GHGs Reduction Act seems quite unique.

In addition to the draft GHGs Reduction Act, the draft Energy Tax Bill is also an important legislation as energy tax is another policy tool that might be used for climate change mitigation purposes. The 'fate' of the draft Energy Tax Bill is no

better than the draft GHGs Reduction Act. The draft Energy Tax Bill was actually first proposed by a group of legislators in 2006. The Executive Yuan briefly discussed the proposed energy tax, but failed to come up with a draft in 2007. The Tax Reform Committee of the Executive Yuan has also put forward a draft energy tax scheme and submitted this proposal to the Executive Yuan in 2009. Due to the protracted economic slowdown, the Finance Minister has stated that energy tax will not be launched in 2014 (Liu 2013). In fact, energy tax is even not listed on the draft agenda of the 4th National Energy Conference scheduled to be held in August 2014 (Yu 2014). It seems that there is still a long way to go before Taiwan adopts an energy or carbon tax system.

3 Taiwan's National Policies on Climate Change Mitigation

Part 2 provided a basic overview on Taiwan's climate change and related policies and laws, focusing more on the legal framework. From this brief introduction, it can be observed that Taiwan does not yet have a comprehensive legal framework to serve as the legal base for adopting concrete climate change mitigation policies. This might partly results from the fact that Taiwan has yet to be legally committed to reduce GHGs emissions. A variety of policy tools and measures are nevertheless in place to encourage both the public and private sector to reduce GHGs emissions. Some policies and measures are not necessarily within the legal and policy framework identified in Part 2. However, these policies and measures are designed to contribute, directly or indirectly, to reduce Taiwan's GHGs emissions. It is rather impossible to present every single policy or measure that is related to Taiwan's climate change mitigation efforts. This Part will use the categorisation of the joint WTO/UNEP report (WTO/UNEP 2009) and introduce the economic incentive measures within the following two categories: price and market mechanisms, and financial mechanisms. Within each category, relevant laws and policies on climate change mitigation will then be illustrated.

3.1 Price and Market Mechanisms

Two broad types of policy measures are used at the national level to mitigate climate change: regulatory measures ("command and control") or economic incentives ("market-based instruments") (WTO/UNEP 2009, p. 88). Weakness of the traditional policy tools of command and control has long been debated amongst regulators. The attractiveness of the market-based instruments lies with the flexibility they offer to regulators (Weishaar 2014). Within the climate change context, the term "carbon pricing instruments" is also used by, for example, the World Bank

to refer to measures such as carbon tax, emission trading scheme, and crediting mechanism (World Bank 2014). According to the World Bank Report in May 2014, there are about 40 countries and over 20 sub-national jurisdictions, representing about 12 % of the annual global GHGs emissions, that have used carbon pricing instruments (World Bank 2014). The joint WTO/UNEP report identified two such national measures: internal taxes on GHGs emissions, and emission trading schemes (WTO/UNEP 2009).

Command and control types of measures are traditionally and widely used in Taiwan's environmental laws. A few market-based instruments have been adopted in Taiwan after mid-1990s. For example, Article 16 of the Air Pollution Control Act authorises the collection of air pollution control fee from stationary and mobile pollution sources. Articles 8 and 9 of the Air Pollution Control Act also sets out criteria to implement the baseline-and-credit type of emissions trading system within the so-called "total quantity control zone" that is designated by the competent authorities.[6] Taiwan began to collect air pollution control fee in 1995. The EPA has planned to implement the baseline-and-credit type of emissions trading system in the southern part of Taiwan and a draft "Kaohsiung-PingTung Total Quantity Control Zone Plan" was proposed in 2012. The draft Plan was to control the emissions of the following four types of air pollutants: total suspended particulate (TSP), SOx, NOx, and VOCs. GHGs are not included. However, the draft Plan has not yet been approved and implemented. The current air pollution control fee and the proposed "total quantity control zone" as of 2015 do not include GHGs emissions. As Part 2 pointed out, the EPA has officially designed six GHGs as air pollutant under the Air Pollution Control Act in 9 May 2012. Legally, thus, the EPA can expand the scope of the current air pollution control fee to include GHGs emissions. The EPA can also designate "total quantity control zone" that covers GHGs emissions. However, it seems that the EPA does not plan to rely on the current legal framework (i.e. the Air Pollution Control Act) to adopt market-based instruments in terms of GHGs emissions reduction. But Taiwan does plan to use market-based instruments in her climate change mitigation policies. As Part 2 pointed out, Taiwan has two important draft legislations concerning climate change: the draft GHGs Reduction Act and the draft Energy Tax Bill. The draft GHGs Act intends to employ emissions trading system and the draft Energy Tax Bill intends to charge energy tax. Currently, the base-and-credit type of emissions trading system for GHGs emissions has been piloted in Taiwan without the required legal authorisation.

Emissions trading system has been identified by the EPA as the major policy tools to mitigate climate change. In the 2nd National Communication, the EPA lays out four major stages of GHGs reduction strategies: voluntary inventory, reporting and reduction; mandatory inventory, reporting and reduction; performance

[6] The system contemplated in Article 8–10 of the Air Pollution Control Act is similar to the US Emissions Reduction Credit Offsets scheme. For introduction and analysis on this early emissions trading system in the US, see: Blas Luis Perez Henriquez (2013). pp. 53–70.

standards & offsets; and cap-and-trade & offsets (Taiwan's Environmental Protection Administration 2012). Before the coming into force of the draft GHGs Reduction Act, the EPA is already implementing the "performance standards & offsets" by issuing domestic credits generated from Early Reduction Project and Domestic Offset Project. Regarding international offset, the EPA only permits the use of certified emissions reductions (CERs) from the CDM projects. In the draft GHGs Reduction Act, a specific cap is not set and the cap-and-trade emission trading system will only be implemented after the competent authority established the cap in accordance with Article 13 of the draft GHGs Reduction Act. It seems that the draft GHGs Reduction Act establishes a two-layer allocation system in Article 13.3 and Article 14.1. After the competent authority, the EPA, sets the cap, it will allocate the cap to different sectoral competent authorities (e.g. MOEA, Council of Agricultural, Ministry of Transportation...etc.). After receiving the allocation from the EPA, each sectoral competent authority will then allocate its quota to industries or enterprises that are under its supervision. Only when industries or enterprises that receive quotas from their supervising agencies will the cap-and-trade system begins to operate. This is rather a unique design in comparison with other cap-and-trade systems that are in operation or in design (Shih 2013). Details rules regarding allocation and other essentials of the emissions trading system are all delegated to the EPA for subsequent rule-making procedures. As all the relevant laws and regulations are not yet in place, it is difficult to envisage how Taiwan's emissions trading system will operate.

Strictly speaking, Taiwan does not, and is not planning to implement a carbon tax system if carbon tax is understood to be a tax regime that is levied on the carbon content of a product or its production process. Many countries that claimed to have implemented carbon tax system actually have an energy tax in place as the tax rates reflect only to some extent the carbon content of those fuels that are taxed (Zarrilli 2013). An energy tax is proposed in Taiwan as the tax will be imposed on energy products. In the draft version that is being discussed in the Executive Yuan, the proposed energy tax will be levied on fossil fuels and related products, such as natural gas, gasoline, diesel, LNGs, coal, kerosene, aviation kerosene, fuel oil. The tax rate is based on the carbon content and the heating value units of each energy product. Taiwan is almost 98 % dependent on imported energy sources (Bureau of Energy 2014a, b). The draft energy tax will be applicable to both domestic and imported taxable energy products. The draft Energy Tax Bill also proposes rules on how to collect energy tax from gasohol, bio-diesel and other renewable energy. It provides that if these products are blended with the fossil fuel-based taxable energy product, energy tax will be charged in proportion to the percentage of these taxable energy products. In other words, biofuel, such as bio-ethanol and bio-diesel is not by itself subject to the energy tax. However, once it is blended with fossil fuels that are taxable product, it will then be subject to energy tax and the tax rate will be determined exclusively on the percentage of the fossil fuel-based product that is blended in the final product.

In addition to identifying two types of market-based instruments, the joint WTO/UNEP report also include "border measures" under its discussion on the

"price and market mechanism" (WTO/UNEP 2009). Such measures are designed to reduce the competitiveness concerns of the domestic industries that need to comply with domestic market-based mechanisms, and to mitigate the possible environmental concern of "carbon leakage" (WTO/UNEP 2009).[7] Several types of border measures, such as border tax adjustments to carbon taxes or energy taxes and border adjustments in relation to an emission trading scheme, are illustrated in the joint report (WTO/UNEP 2009). In the proposed cap-and-trade emissions trading system, border measures are not incorporated in the draft GHGs Reduction Act. Nevertheless, the possibility of adopting border adjustment measures in Taiwan's future emission trading system has not yet been extensively discussed in the current policy debate. As an export-oriented economy, Taiwan is actually more concerned with whether countries operating emissions trading system will use border adjustment measures. In the proposed energy tax regime, one version of the draft Energy Tax Bill does incorporate the concept of border tax adjustment. In the draft version that is being discussed in the Executive Yuan, the proposed energy tax will be imposed on imported taxable energy products. In addition, energy products that are exported will be exempted from the energy tax. For those products that have already paid the energy tax, a refund can be granted for those energy products that are exported, or that are used as raw material to produce another energy products that will be exported.

3.2 Financial Mechanisms

Financial mechanisms for climate change have continued to be a hugely debated topic in the post-Kyoto negotiation under the UNFCCC (UNFCCC n.d.). The term "financial mechanisms" used in the context of UNFCCC refer to a set of principles and procedures to generate, deliver, and govern financial resources for climate change mitigation and adaptation purposes.[8] The WTO/UNEP joint report regards "financial mechanisms" as another type of economic incentive measures and defines it as: "government funding to enhance the deployment and utilization of new climate-friendly technologies and renewable energy" (WTO/UNEP 2009). This is a narrower meaning than the term used in the UNFCCC context. It only refers to government support measures, such as fiscal measures, price support measures and investment measures, to provide incentives to promote invention and encourage the use of climate-friendly goods and technologies (WTO/UNEP 2009).

[7] For more discussion on the use of border measures in climate policy, see: Kateryna Holzer (2014), pp. 50–62.

[8] For more discussion on the climate change financial mechanisms in the context of international climate change regime, see Shih (2011a).

Various types of support measures have been employed in Taiwan to support the use of climate-friendly goods and technologies. For example, the 2014 Act for Industrial Innovation provides grants or tax reductions to enterprises that meet the requirements under the Act. For climate change purposes, Article 26 of the Act for Industrial Innovation provides grants to companies that develop and apply technologies relating to GHGs reduction and pollution prevention, or that improve energy efficiency and adopt relevant technologies relating to recycling, renewable energy and water conservation. An important funding source for support measures comes from the "Air Pollution Control Fund", set up by the EPA according to Article 18.2 of the Air Pollution Control Act. The major contribution to the Fund is from the collection of air pollution control fee. Article 18.1 provides an illustrative list on the use of the air pollution control fee. For example, incentives for promoting the use of clean energy and related R&D is one of the designated uses of the air pollution control fee. Article 18.4 authorises the competent authority to lay down regulations concerning the use of the air pollution control fee. The EPA has used this Fund to provide various types of subsidies to promote the use of, for example, electrical assisted bicycles, electrical bicycles, electrical motorcycles, LNGs used as fuel, etc.[9] The Fund even provides subsidised price to purchase electricity generated from methane projects that captures and flares methane from certain types of landfill sites. From 1996 to 2012, the average amount collected from the air pollution control fee per year is approximately NT$3.2 billion (approximately US $100 million).[10] The EPA has already used this Fund to provide support to climate change mitigation measures mostly via subsidies. Now that the six GHGs have been officially declared as air pollutant under the Air Pollution Control Act, the EPA should be able to use the Fund to provide support for more climate change mitigation measures and policies.

Another important funding source for support measures is the Renewable Energy Development Fund. Article 7.1 of the Renewable Energy Act mandates that electricity companies, such as Tai-power and independent power producers, exceeding a certain installation capacities have to pay contribution to this Fund. The amount is calculated by the total power generated of its non-renewable energy and the exact rate is determined by the competent authority. According to Article 7.4 of the Act, the Fund can be used to subsidise the feed-in tariffs scheme, renewable energy facilities, promotion of the use of renewable energy, and other purposes related to the development of renewable energy. For example, the Fund provides subsidies to generating equipment and facilities for renewable energy at their early states of technical development according to Article 11 of the Act. The Act also lays down other subsidy programme that is funded by other national funds set up under

[9] See the list of regulations on subsidies provided by the Fund at: http://ivy5.epa.gov.tw/epalaw/index.aspx.

[10] This figure is calculated from the information provided by Taiwan EPA (2014) at the following website: http://air.epa.gov.tw/Public/economical.aspx. According to this website, the total income from the air pollution control fee from 1996 to 2012 is approximately NT$52.2 billion.

different legislation. For example, a "Petroleum Fund" was established in 2001 under the Petroleum Administration Act with contribution from fee charged under Article 34 of the Act. According to Article 34 of the Petroleum Administration Act, a fixed-rated fee will be charged to the following activities: exploration or import of oil, and petroleum by-products produced by petrochemical feedstock manufacturers and sold to oil refinery operators. According to Article 36 of the Petroleum Administration Act, the Petroleum Fund can be used to subsidise programmes that rewards heat use of renewable energy to replace petrol energy. Several types of heat utilisation of renewable energy, such as solar energy and biomass fuel, can apply for subsidies according to Article 13 of the Renewable Energy Development Act. The expenses for the substituted portions of petroleum energy may be financed by the Petroleum Fund. For example, the subsidies provided to purchase and install solar energy water heater are financed by the Petroleum Fund.[11] To encourage the use of energy-saving products, the Petroleum Fund also provide subsidies to household that purchase energy-saving gas table stove or natural gas water heater that have obtained a certain types of Energy Label—a voluntary labelling scheme designed by the Bureau of Energy, MOEA.

Along with providing subsidies via the Renewable Energy Development Fund and other public funds, the Renewable Energy Act also lays down fiscal measures to encourage the development of renewable energy. Article 16 of the Renewable Energy Act offers import duties exemption to certain machineries, equipment, special transportation equipment, components and parts that are used for the construction or operation of renewable energy power facilities, or renewable energy power facility for personal use, provided that conditions laid down in the same Article are met. One of the conditions is that such product cannot be domestically produced or supplied. If the product can be manufactured or supplied domestically, import duties cannot be exempted. However, the import duties can be paid in instalments after 1 year of the completion of the projects, provided that the applicant had provided adequate warranty.

Other than subsidies and fiscal measures, feed-in tariffs (FIT) for renewable energy are also identified in the WTO/UNEP joint report (2009) as a very common support measure. In the Renewable Energy Act, Taiwan also adopts the FIT scheme, which is expected to play a key role in promoting the development of renewable energy in Taiwan (Gao 2012). The government begins the implementation of the FIT scheme in 2010. The FIT rate is set annually by the FIT Committee that consists of representatives from relevant government agencies, academics, industries, and NGOs. Different FIT rates apply to different types of renewable energy and different installation capacities. A PV tendering scheme was introduced in 2011 as the favourable rate for PV energy in 2010 led to a short PV boom (Gao 2012). The FIT scheme does not impose any domestic content requirements that have been seen in some countries (such as Canada or India).

[11] See the regulation adopted by the MOEA under the authorisation of Article 13.1 of the Renewable Energy Development Act (2013).

4 Potential Interaction with the WTO Rules

Part 2 has introduced Taiwan's overall climate change mitigation policies and law. Part 3 next illustrated various economic incentive-types of policy tools that have been or are proposed to be used by Taiwan. Whether this mix of policy tools will help Taiwan to reduce her GHGs emissions is yet to be seen. On a more practical level, legal foundations for each policy tool will be crucial as it will affect the legality, both domestically and internationally, of the measure in question. Should subsequent legal challenges arise as a result, any measure, regardless of their environmental effect, would have to be withdrawn or revised. It will seriously undermine the government's effort to address climate change concern. As Taiwan is a WTO Member, one legal aspect of evaluating these policy tools is from the perspective of whether they comply with relevant WTO rules. This Part will, thus, select some policy tools that are described in Part 3 and conduct a very brief legal analysis from the perspective of WTO rules.

4.1 Price and Market Mechanisms

Two market-based measures are planned to be adopted as Taiwan's main climate change mitigation policy tools: emissions trading and energy tax. Border measures are also being proposed in one version of the draft Energy Tax Bill. A brief analysis on the potential interaction of these measures with the WTO rules will first be examined. If any of the measure falls under the ambit of the WTO rules, the compatibility with the applicable WTO rules will then be examined.

4.1.1 Emissions Trading System

Regarding emissions trading, there has already been a stream of publications discussing the relationship between emissions trading system and the WTO rules. Whether national legislation on emissions trading falls under the WTO rules partly depends on the legal characteristics of the 'commodity' or 'units' being traded from the perspectives of the WTO. A few articles have addressed this issue (Charnovitz 2003; Petsonk 1999; Werksman 1999; Wiser 1999).[12] If the units that are being traded under the emission trading system are regarded as goods or services, the legal disciplines of the GATT or the GATS might apply. Under this circumstance, conditions concerning the so-called "linkage", i.e. whether to recognise international/foreign units (whether allowances or credits) under the domestic emissions trading system would have to conform to the basic non-discrimination principles as

[12] Many subsequent literature draws from the conclusions of these articles regarding the characterisation of the traded units. See also Shih (2012).

laid down in Article I & III of the GATT or Article II & XVII of the GATS. However, the present author, after reviewing previous experiences on other types of market-based instruments, argued that national legislation on emissions trading, especially regarding whether to recognise, or under what conditions to recognise foreign emission reduction units, falls outside the WTO rules as the traded units are neither goods nor services in the context of WTO law (Shih 2012). From this perspective, Taiwan's national legislation on emissions trading might not have any interaction with the WTO rules. Under this circumstance, the current baseline-and-credit emissions trading system that only recognises one foreign offsets, the CERs generated from the CDM, might not be challenged as violating the principle of non-discrimination under the GATT or the GATS.

4.1.2 Energy Tax

Regarding energy tax, the most relevant applicable WTO rules might be Article III:2 of the GATT that imposes national treatment obligations on the administration of internal taxes and other internal charges. If border measures are instituted in the energy tax regime, relevant WTO rules concerning border tax adjustments (BTA) on imports and exports are also applicable. According to the Report of the GATT Working Party on Border Tax Adjustment, BTA can only be applied to indirect tax (GATT 1970, para. 14). GATT Article III:2, *Ad* Article III:2, and Article II:2(a) are the most relevant rules on BTA on imports. GATT *Ad* Article XVI and Article VI:2 and the following provisions of the Agreement on Subsidies and Countervailing Measures (SCM Agreement) are the most relevant rules on BTA on exports: footnote 1 to Article 1:1(a)(ii), Annex I paragraphs (g) and (h) and relevant footnotes, and Annex II. Section 4 (Shih 2011b). As the draft Energy Tax Bill has not been adopted by the Legislative Yuan, the detailed design of the energy tax regime is not yet known. The following discussion will be based on the version of the draft that is being discussed in the Executive Yuan.

According to this draft, BTA will be imposed on import and export. The energy tax will apply to both domestic and imported taxable energy products. Energy products that are exported will be exempted from the energy tax. For those products that have already paid the energy tax, a refund can be granted for those energy products that are exported, or that are used as raw material to produce another energy products that will be exported.

Regarding the imposition of BTA on import, controversial issues such as "like product", "input", and "process and production method" (PPM) greatly affect the legal analysis on the subject and scope of BTA on import as stipulated in GATT Article III:2, *Ad* Article III:2, and Article II:2(a). The proposed energy tax is levied on fossil fuel-based energy products. PPM issue, thus, might not arise as in the case of energy or carbon tax that is calculated on the carbon content or energy use in the production process. But "like product" issue might arise regarding, for example, biofuel (Shih 2011b). In the draft Energy Tax Bill, biofuel is not subject to energy tax unless it is blended with the fossil fuel-based energy product. The tax rate is

determined exclusively on the percentage of the taxable fossil fuel-based energy product. If such principle applies both to domestic and imported biofuel, legal dispute might not arise regarding the subject and scope of import BTA. Other conditions, such as the national treatment principle in GATT Article III:2, will of course need to be complied with.

Regarding the BTA on export, similar controversies regarding the subject and scope also exist. For example, whether, and to what extent, indirect tax imposed on input or production process can be subject to export BTA will depend on the interpretation of paragraph (g) in Annex I of the SCM Agreement (Shih 2011b). In the draft Energy Tax Bill, energy products that are exported will be exempted from the energy tax. This is a fairly straight-forward BTA on export that falls within the scope of GATT *Ad* Article XVI and Article VI:2. For those products that have already paid the energy tax, a refund can be granted for: 1. energy products that are exported, or 2. energy products that are used as raw material to produce another energy products that will be exported. The first category is the same as the aforementioned provision on energy tax exemption. The second category seems to fall within the debate on whether indirect tax on "input" qualifies the imposition of export BTA. As the proposed energy tax is not the type of prior-stage cumulative tax, paragraph (g) in Annex I of the SCM Agreement, which has more detailed rules regarding input and production process, might not apply. It will, thus, depend on how the term "in respect of the production and distribution of exported products" in paragraph (g) in Annex I of the SCM Agreement is interpreted (Shih 2011b). If these two categories are determined to be falling under the subject and scope of BTA on export, other legal conditions (for example, the exemption shall not be *in excess of* those levied on the like domestic product) contained in the relevant provisions will of course need to be complied with.

4.2 Financial Mechanisms

As illustrated in Part 3, Taiwan has used a variety of support measures to encourage the use of climate change-friendly goods and technologies. This sub-section will briefly review the potential interaction of two support measures with the WTO rules: the FIT scheme and import duties exemption under the Renewable Energy Development Act.

4.2.1 The FIT Scheme

FIT scheme to encourage the deployment and use of renewable energy has been widely used by many WTO Members. In the Canada—Certain Measures Affecting the Renewable Energy Generation Sector case (the Canada—renewable energy case), the domestic content requirements in Ontario's FIT scheme was challenged by the EU and Japan as incompatible with, *inter alia*, Article III:4 of the GATT,

Articles 1.1 and 3.1(b) of the SCM Agreement, and Article 2.1 of the TRIMs Agreement (WTO 2012, 2013). For starter, the current FIT scheme in Taiwan does not impose any domestic content requirements. However, whether such an approach will be used in the future to boost the local renewable energy sector remains a possibility. It is, thus, imperative, to follow relevant WTO cases closely and take them into consideration should the government decides to revise the current FIT scheme.

In the Canada—renewable energy case, two crucial legal issues are: 1. Whether the FIT scheme in question falls outside the scope of GATT Article III:4 because purchase of electricity through the FIT programme qualifies the conditions set out in GATT Article III:8(a), and, 2. Whether the FIT scheme in question is "subsidy" under the SCM Agreement. Regarding the first issue, GATT Article III:8 (a) stipulates: "the provisions of this Article shall not apply to laws, regulations, or requirements governing the procurement by governmental agencies of products purchase for governmental purposes and not with a view to commercial resale or with a view to use in the production of goods for commercial sale." The Appellate Body conducts detailed analyse on several elements that describes the types and content of measures falling under Article III:8(a) (WTO 2013, paras. 5.54–5.74). For example, the term "governmental agencies" refers to "those entities acting for or on behalf of government in the public realm within the competences that have been conferred on them to discharge governmental functions." (WTO 2013, paras. 5.61). The term "products purchased for governmental purposes" refers to "what is consumed by government or what is provided by government to recipients in the discharge of its public functions. The scope of these functions is to be determined on a case by case basis." (WTO 2013, paras. 5.68). The Appellate Body, contrary to the Panel's finding, finds that the FIT programme and related FIT contracts are not covered by Article III:8(a) as the product being purchased by a governmental agency (i.e. electricity) for purposes of Article III:8(a) is not the same as the product that is treated less favourably as a result of the domestic content requirement (i.e. generation equipment) (WTO 2013, para. 5.75). Taiwan, unlike the partially liberalised hybrid system in Ontario (WTO 2012, para 7.25), does not yet have a liberalised electricity market. A state-owned enterprise, the Tai-power, dominates the electricity market from the upstream generation to downstream retail (Gao 2012). For the following reasons, it seems highly likely that Taiwan's FIT scheme meet the requirements of GATT Article III:8(a). First, under the Renewable Energy Development Act, FIT contract is to be signed between renewable energy power supplier and the public electricity utility, which means the Tai-power. Second, Tai-power is a state-owned enterprise whose shares are 100 % owned by the MOEA. The Chairman and Board of Directors are all appointed by the MOEA. Third, Tai-power is the only vertically integrated utility set up under the Electricity Act with generation, transmission and distribution functions. It is highly regulated by the government. For example, Tai-power has the legal duty to supply electricity according to the Electricity Act. The price that Tai-power charged is also determined by the MOEA. From all these characteristics of the Tai-power, it seems very likely that the Tai-power might be regarded as "governmental agencies" as

interpreted by the Appellate Body. Furthermore, Tai-power is obligated under the Renewable Energy Development Act to enable the power generated from qualified renewable energy source to be connected to the grid it owns and operates. And Tai-power is legally responsible to supply electricity to the consumer. It seem, thus, that the purchase of power generated from renewable energy by the Tai-power could be regarded as purchasing product "for governmental purposes" as interpreted by the Appellate Body. From all these examinations, Taiwan's current FIT scheme might meet the requirement of GATT Article III:8(a) and, as a result, fall outside the scope of GATT Article III:4.

The second major legal issue in the Canada—renewable energy case relates to the definition of subsidy under the SCM Agreement. The Panel found, which is upheld by the Appellate Body, that the legal characterisation of the FIT programme and contracts in question should be regarded as "financial contribution in the form of government purchases of goods within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement (WTO 2012, paras. 7.222–7.243; 2013, para. 5.128). However, the Panel concluded that the complainants failed to establish that the challenged measures confer a benefit within the meaning of Article 1.1(b) of the SCM Agreement (WTO 2012, para 7.320). The Appellate Body found that the Panel has erred for "failing to conduct the benefit analysis on the basis of a market that is shaped by the government's definition of the energy supply-mix, and of a benchmark located in that market reflecting competitive prices for wind-power and solar PV generation." (WTO 2013, para. 5.219). The Appellate Body, nevertheless, found that there are insufficient factual findings by the Panel and uncontested evidence on the Panel record that could allow the Appellate Body to complete the legal analysis (WTO 2013, para. 5.246). The operational model of Taiwan's FIT scheme is quite similar to that of the FIT programmes and contracts operated in Ontario. Taiwan's FIT scheme, thus, might also be characterised as "financial contribution in the form of government purchases of goods within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement." On another note, the funding for Taiwan's FIT scheme comes mostly from the Renewable Energy Development Fund. This Fund is set up according to the Renewable Energy Development Act with contribution from electricity companies. The Fund is a type of "Special Fund" regulated under Article 4, subparagraph 2 of the Budge Act. The governance and use of the Fund are all regulated under the regulation published by the MOEA under the authorisation of Article 7.1 of the Renewable Energy Development Act. Therefore, Taiwan's FIT scheme might fall under Article 1.1(a)(1)(iv) of the SCM Agreement. Last but not least, regarding the condition of "conferring benefit", the Appellate Body in the Canada—renewable energy case confirmed that Article 14 of the SCM Agreement can be used as the relevant context for the interpretation of benefit under Article 1.1(b) (WTO 2013, paras. 5.163–5.165). Therefore, whether Taiwan's FIT scheme will be considers as conferring benefit depends on the identification of the "relevant market" where comparison can be made before determining whether the recipients of the FIT scheme is rewarded "more than adequate" compared with the remuneration the same generators would receive on this market (WTO 2012, para. 7.272). The Appellate Body has observed that the

parameters of the marketplace would need to take into account the energy supply-mix for electricity generation defined by the Government of Ontario (WTO 2013, para. 5.225). In the case of Taiwan, the government has not set a clear policy goal of energy supply-mix. As this important parameter is missing, it is rather difficult to find the relevant market to analyse whether benefit is conferred under the current FIT scheme.

4.2.2 Import Duties Exemption

Section 3.2 pointed out that Article 16 of the Renewable Energy Development Act offers import duties exemption to certain machineries, equipment, special transportation equipment, components and parts that are used for the construction or operation of renewable energy power facilities, or renewable energy power facility for personal use, provided that conditions laid down in the same article are met. One of the conditions is that such product cannot be domestically produced or supplied. If the product can be manufactured or supplied domestically, import duties cannot be exempted. According to Article I:1 of the GATT, with respect to, *inter alia*, customs duties, any advantage, favour, privilege or immunity granted by any WTO Member to any product originating in any other country shall be accorded "immediately and unconditionally" to the like product originating in the territories of all other WTO members. Under Article 16 of the Renewable Energy Development Act, import duties to certain products used for the construction or operation of renewable energy power facilities can only be exempted if such product cannot be domestically produced or supplied. In other words, the import duties exemption is not granted without conditions. In the Canada—Certain Measures Affecting the Automotive Industry case, similar measure, i.e. import duties exemption for the importation of automobiles that quality certain conditions as prescribed under the Canadian Motor Vehicles Tariff Order, was challenged by Japan and EU as violating, *inter alia*, GATT Article I:1 (WTO 2000a, b). The panel stated that: ". . .the fact that conditions attached to such an advantage are not related to the imported product itself does not necessarily imply that such conditions are discriminatory with respect to the origin of imported products." (WTO 2000b, para. 10.24) However, the panel also noted that "GATT/WTO jurisprudence has established that Article I:1 encompasses both *de jure* and *de facto* forms of discriminations." (WTO 2000b, para. 10.38) And the panel further stated that: ". . .we believe that account should also be taken of the possibility that the limitation of the exemption to certain importers may be itself have a discriminatory impact on the treatment of like products of different origins." (WTO 2000b, para. 10.40) Accordingly, attaching conditions unrelated to the origin of the product is not itself a violation of Article I:1. Nevertheless, such conditions cannot result in *de facto* discrimination. Under Article 16 of Renewable Energy Development Act, import duties exemption can only be granted to certain products that cannot be domestically manufactured or supplied. Imposing conditions on imported product eligible for import duties exemption are not itself a violation of the most favoured nation principle. However, whether such condition will result in *de facto*

discrimination as to the origin of the products will require further examination on the design and operation of this measure. For example, the agency in charge has certain discretion in issuing the certificate of "cannot be manufactured or supplied domestically". Whether this discretion is systematically being abused so that only imported products from one or a group of WTO Members are eligible to receive the import duties exemption will be an important factor in analysing the legality of this measure under Article I:1 of the GATT.

5 Conclusion

This article sketched out an overview on Taiwan's legal and policy framework for climate change mitigation. Despite a lack of proper legal underpinning and a binding GHGs emissions reduction target and timetable, Taiwan's government have adopted a variety of policy tools to address climate change mitigation concerns. Focusing on economic incentive measures, this article selected a few policy tools that is being used, or is planning to be used in Taiwan. The following policy tools have been further analysed from the perspectives of potential interaction with the WTO rules: emissions trading system, energy tax, the FIT scheme, and import duties exemption for certain products. The first two policy tools are not yet implemented in full whilst the last two are already in place. The potential interaction of the emissions trading system with WTO rules might be limited as units that are being traded under the emissions trading system are neither goods nor services in the context of the GATT or the GATS. Regarding the proposed energy tax and the associated BTA on import and export, WTO rules on BTA are most likely to be applicable. Under the circumstance, detail regulations regarding tax rate and taxable products will have to pay particular attention to the relevant WTO rules on BTA both on import and export. As for the FIT scheme, this article preliminary concludes that it might meet the requirement of the GATT Article III:8(a) and, as a result, fall outside the scope of GATT Article III:4. Furthermore, the FIT scheme might be regarded as "financial contribution" in the form of purchase of goods as defined under Article 1.1(a)(1)(iii) of the SCM Agreement. It might also meet the requirement of Article 1.1(a)(1)(iv) of the SCM Agreement. However, as the government has not set a clear policy goal on energy supply-mix, it is difficult to find the relevant market to analyses whether benefit is conferred under the current FIT scheme. As for the import duties exemption, further analysis on the design and operation of this measure will be needed before determining its compatibility with Article I:1 of the GATT.

The introduction of Taiwan's climate change mitigation policies and laws in this article are not comprehensive. The legal analysis on their potential interaction and compatibility with the WTO rules are also very rough and preliminary. It is hoped that this article can serve as a foundation for laying down most of the essential information so that further and more specific or detailed analysis can be conducted in the future.

References

Basic Environment Act (2002) http://law.moj.gov.tw/Eng/LawClass/LawContent.aspx?PCODE=O0100001. Accessed 17 Aug 2014

Air Pollution Control Act (2012) http://law.moj.gov.tw/Eng/LawClass/LawContent.aspx?PCODE=O0020001. Accessed 17 Aug 2014

Air Pollution Control Enforcement Rules (2003) http://law.moj.gov.tw/Eng/LawClass/LawContent.aspx?PCODE=O0020002. Accessed 17 Aug 2014

Bureau of Energy (2014a) Renewable Energy. http://web3.moeaboe.gov.tw/ECW/populace/Law/Content.aspx?menu_id=654. Accessed 6 Aug 2014 (in Chinese)

Bureau of Energy (2014b) Energy Statistical Annual Report 2012. http://web3.moeaboe.gov.tw/ECW/english/content/ContentLink.aspx?menu_id=1540. Accessed 15 Aug 2014

Charnovitz S (2003) Trade and climate: potential conflict and synergies. Pew Centre on Global Climate Change

Energy Administration Act (2009) http://law.moj.gov.tw/Eng/LawClass/LawContent.aspx?PCODE=J0130002. Accessed 17 Aug 2014

Gao A (2012) Taiwan's recent efforts to promote renewable energy development: policy measures, legal measures, challenges, and solutions in the Post-Fukushima Era. Renew Energy Law Policy Rev 3:263–279

Gao A (2013) Development of a legal framework for climate change in Taiwan: lessons from Europe and Germany. Carbon Clim Law Rev 7(1):54–70

General Agreement on Tariffs and Trade (1970) Report of the GATT Working Party on Border Tax Adjustments. http://www.wto.org/gatt_docs/English/SULPDF/90840088.pdf. Accessed 14 Aug 2014

Henriquez B (2013) Environmental commodities markets and emissions trading: towards a low-carbon future. REF Press, Oxon, UK & New York, USA

Holzer K (2014) Carbon-related border adjustment and WTO law. Edward Elgar, Cheltenham, UK & Northampton, MA, USA

International Energy Agency (2013) Key World Energy Statistics 2013. http://www.iea.org/publications/freepublications/publication/KeyWorld2013_FINAL_WEB.pdf. Accessed 29 July 2014

Liu J (2013) Energy tax will not take effect in 2014: Chang. May 24, The China Post. http://www.chinapost.com.tw/taiwan/national/national-news/2013/05/24/379393/Energy-tax.htm. Accessed 6 Aug 2014

Ministry of Economic Affairs (2008) Framework of Taiwan's Sustainable Energy Policy. http://web3.moeaboe.gov.tw/ECW/english/content/Content.aspx?menu_id=1524. Accessed 4 Aug 2014

Petsonk A (1999) The Kyoto Protocol and the WTO: integrating greenhouse gas emissions allowance trading into the global marketplace. Duke Environ Law Policy Forum 10:185–220

Renewable Energy Development Act (2009) http://law.moj.gov.tw/Eng/LawClass/LawContent.aspx?PCODE=J0130032. Accessed 17 Aug 2014

Renewable Energy Development Act (2013) http://law.moj.gov.tw/LawClass/LawAll.aspx?PCode=J0130036. Accessed 13 Aug 2014 (in Chinese)

Shih W (2011a) Financial mechanisms for climate change: lessons from the reform experiences of the IMF. NTU Law Rev 6(2):581–617

Shih W (2011b) The border tax adjustment provisions of the GATT/WTO and their implications on the design of energy and carbon tax. Int Trade Bus Law Rev, XIV, pp 53–84

Shih W (2012) Legal nature of the traded units under the emissions trading systems and its implications to the relationship between emissions trading and WTO. Manchester J Int Econ Law 9(2):112–141

Shih W (2013) WTO, climate change and energy. Angle Publishing, Taipei (in Chinese)

Taiwan Environmental Protection Administration (2010) EPA's Principles of Promoting GHGs Early Action Project and Offset Project. http://estc10.estc.tw/ghgenglish/index.asp?titlename=report. Accessed 4 Aug 2014

Taiwan Environmental Protection Administration (2012) Second National Communication of the Republic of China (Taiwan) under the United Nations Framework Convention on Climate Change, Taipei. http://unfccc.saveoursky.org.tw/nc_2nd/images/nc_2nd/uploads/nc_v3/nc_en.pdf. Accessed 29 July 2014

Taiwan Environmental Protection Administration (n.d.) Environmental Regulations. http://ivy5.epa.gov.tw/epalaw/index.aspx. Accessed 17 Aug 2014 (in Chinese)

Taiwan Environmental Protection Administration Executive Yuan (2006) GHGs Reduction Act – the Draft. http://www.epa.gov.tw/public/Attachment/43511371870.pdf. Accessed 17 Aug 2014

Taiwan Environmental Protection Administration Executive Yuan (2014a) Economic Incentives Improvement Strategy. http://air.epa.gov.tw/Public/economical.aspx. Accessed 13 Aug 2014 (in Chinese)

Taiwan Environmental Protection Administration Executive Yuan (2014b) Greenhouse Gas Emissions Statistics. http://www.epa.gov.tw/ct.asp?xItem=10052&ctNode=31352&mp=epa. Accessed 16 July 2014 (in Chinese)

UNFCCC (n.d.) Focus: Climate Finance. http://unfccc.int/focus/climate_finance/items/7001.php. Accessed 12 Aug 2014

Weishaar S (2014) Emissions trading design: a critical overview. Edward Elgar, Cheltenham, UK & Northampton, MA, USA

Werksman J (1999) Greenhouse gas emissions trading and the WTO. Rev Eur Commun Int Environ Law 8(3):251–264

Wiser G (1999) The clean development mechanism versus the world trade organization: can free-market greenhouse gas emissions abatement survive free trade? Georgetown Int Environ Law Rev 11:531–597

World Bank (2014) State and Trend of Carbon Pricing 2014. http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/05/27/000456286_20140527095323/Rendered/PDF/882840AR0Carbo040Box385232B00OUO090.pdf. Accessed 7 Aug 2014

World Trade Organization (2000a) Canada – Certain Measures Affecting the Automotive Industry. Report of the Appellate Body WT/DS139/AB/R; WT/DS142/AB/R, Geneva

World Trade Organization (2000b) Canada – Certain Measures Affecting the Automotive Industry. Report of the Panel WT/DS139/R; WT/DS142/R, Geneva

World Trade Organization (2012) Canada—Certain Measures Affecting the Renewable Energy Generation Sector. Report of the Panel WT/DS412/R; WT/DS426/R, Geneva

World Trade Organization (2013) Canada—Certain Measures Affecting the Renewable Energy Generation Sector. Report of the Appellate Body WT/DS412/AB/R; WT/DS426/AB/R, Geneva

World Trade Organization, United Nations Environment Programme (2009) Trade and Climate Change: WTO-UNEP Report. http://www.wto.org/english/res_e/booksp_e/trade_climate_change_e.pdf. Accessed 31 July 2014

Yu LJ (2014) Energy Conference in August Nothing about the Energy Tax. Chinatimes May 12. http://www.chinatimes.com/newspapers/20140512000042-260210. Accessed 6 Aug 2014 (in Chinese)

Zarrilli S (2013) Domestic taxation of energy products and multilateral trade rules: is this a case of unlawful discrimination. J World Trade 37(2):359–394

Part III
Future Agenda of the Trade for Climate Change Issues

Making Allowances for Carbon Emission Allowances in Investor-State Disputes: A Case Study of the Republic of Korea

Deok-Young Park and Yonjong Yoon

1 Introduction

On December 2, 2014, the National Assembly of the Republic of Korea passed the two ratification bills for Korea-Australia and Korea-Canada free trade agreements (FTAs) containing investor-State dispute settlement (ISDS) provisions soon after the end of trade negotiations with the two Pacific Rim partners, regardless of an on-going multi-billion dollar ISDS claim initiated by the Lone Star Funds—an American private equity firm—against the Korean government (LSF-KEB Holdings SCA and others 2012), invoking similar ISDS provisions provided in another investment treaty with the Belgium-Luxembourg Economic Union (Korea-Belgium/Luxembourg BIT 2006). In fact, this claim placed Korea for the first time as a respondent State in known ISDS cases (UNCTAD 2013).[1] Such a bipartisan support to the proposed bills resembles that of the National Assembly in May 2012 when its members passed the Emissions Trading Scheme (ETS) bill almost unanimously with only 3 abstentions and placed Korea as the first Asian country to initiate an ETS (International Emissions Trading Association 2013), despite the fact that the ETS of the European Union (EU), the largest carbon trading market, revealed its serious loopholes in its trial period. Interestingly enough, the two FTAs and the Korean Emissions Trading Scheme (KETS) came into effect concurrently from January 2015.

These two seemingly discrete events of legislation in the National Assembly, however, may lead the nation into an undiscovered wilderness where the KETS

[1] Prior to this claim, however, there was one reported case under ICSID, although it was settled and discontinued with no record of proceedings. See *Colt Industries Corporation v. Republic of Korea* (1984).

D.-Y. Park (✉) • Y. Yoon
Yonsei Law School, 50 Yonsei-ro, Seodaemun-gu, Seoul 120-749, South Korea
e-mail: lawpd@yonsei.ac.kr; yonjongyoon@yonsei.ac.kr

D.-Y. Park (ed.), *Legal Issues on Climate Change and International Trade Law*,
DOI 10.1007/978-3-319-29322-6_6

steps into a mire of foot-dragging investor-state disputes based on the ISDS provisions of those FTAs. There has been no such case reported yet where an investor invokes international investment agreements (IIAs) to challenge an ETS. Taking into consideration an increasing number of investor challenges against environmental regulations adopted by national authorities in recent years,[2] however, there is no reason not to expect one in the near future. In particular, if carbon emission allowances allocated to foreign investors qualify as covered investments under the existing IIAs, then any government regulation causing financial losses to those allowances will be challenged by foreign investors.

Hence, this paper carefully reviews definition of carbon emission allowances under the KETS as well as definitions of investments provided in major IIAs, in particular those involving Korea as one of their contracting parties. Based on this review, this paper determines whether carbon emission allowances fall under definitions of investment provided in those IIAs. This will be followed by an analysis of various investor challenges against the EU ETS during its Phase I and II before the Court of Justice of the EU (CJEU), and their implications to potential cases before ISDS tribunals if arbitrators acknowledge carbon emission allowances as investment under IIAs. This paper then concludes with policy-oriented proposals for Korea and other potential ETS countries to deal with potential investor-state disputes involving carbon emission allowances from both host State and home State perspectives.

2 Definition of Carbon Emission Allowances

2.1 Overview

Greenhouse gas emissions, commonly known as carbon emissions, are defined as the "release of greenhouse gases and/or their precursors into the atmosphere over a specified area and period of time" in Article 1 of the United Nations Framework Convention on Climate Change. The EU ETS specifies the term "allowance" in its legislation as "an allowance to emit one tonne of carbon dioxide equivalent during a specified period, which shall be valid only for the purposes of meeting the requirements of this Directive and shall be transferable in accordance with the provisions of this Directive" (European Union 2003). Commentators in Korea have been largely divided in determining a legal character of carbon emission allowances due to the absence of their clear definition in a series of legislations concerning the KETS. Some scholars characterized carbon emission allowances as subjective public rights under a permit system (Kang 2010), while financial sectors, seeking lucrative opportunities from the KETS, preferred carbon emission allowances to be

[2] See, for instance, *Metalclad Corp. v. United Mexican States* (2001); *Methanex Corp. v. United States* (2005); *Pac Rim Cayman* LLC *v. Republic of El Salvador* (2009).

considered as financial investment instruments such as securities and derivatives (Lee 2009).[3] In the following section, this paper will review domestic legislations of the KETS and how they frame carbon emission allowances.

2.2 Legislation of the KETS

As mentioned above, the Korean National Assembly passed the *Act on Allocation and Trading of Greenhouse-Gas Emission Permits* (hereinafter the KETS Act) on May 2, 2012 providing a legal basis for implementing the KETS.[4] Unfortunately, however, this KETS Act merely defines a carbon emission allowance ("emission permit" in its unofficial translation) in Article 2(3) as an amount of greenhouse-gas emissions permitted and allocated to an individual business entity producing greenhouse gases within the scope of total allowances set for greenhouse gas emissions. This definition does not specify its legal character at all. Article 20 requires business entities including foreign corporations and individuals to register their account for trading emission allowances in the emission permits register, which enables characterization of carbon emission allowances as credits once registered. This characterization, however, does not imply any bearing on its legal status under the existing IIAs either. This paper, therefore, will analyze characteristics of carbon emission allowances from a legal perspective and examine how they fit into the notion of investments under the existing IIAs.

2.3 Legal Characterization of Carbon Emission Allowances in the KETS

Given the fact that the Korean Ministry of Environment designated the Korea Exchange (KRX), the sole securities exchange operator in Korea, as the official emission permits exchange in January 2015 (Ministry of Environment of the Republic of Korea 2014), a legal character of carbon emission allowances seems to lean toward financial investment instruments, instead of subjective public rights. Under the *Financial Investment Services and Capital Markets Act* (hereinafter the Capital Markets Act) regulating the Korean capital market, the term "financial investment instrument" is defined in Article 3(1) as the following:

[3] Lee (2009) considered carbon emission allowances as securities such as stocks and bonds which are tradable in a stock exchange.

[4] Its full text in English is available online at the Korea Legislation Research Institute (KLRI) Legislative Translation Center website, http://elaw.klri.re.kr/eng_service/lawView.do?hseq=24561&lang=ENG. This is not an official translation, and thus it is not equally authentic to its original text in Korean.

> . . . a right acquired by an agreement to pay, at a specific time in the present or in the future, money or any other valuable thing . . . with an intention to earn a profit or avoid a loss, where there is a risk that the total amount of such money or similar, paid or payable, for the purpose of acquiring such right . . . may exceed the total amount of money or similar already recovered or recoverable from the right.

Article 3(2) specifies securities and derivatives as forms of financial investment instruments under Article 3(1). Taking into consideration that business entities buy and sell surplus carbon emission allowances so as to "earn a profit or avoid a loss," involving a "risk" as carbon allowance buyers and sellers may not recover their initial capital committed to those allowances due to price fluctuation, it is evident that carbon emission allowances can be qualified as financial investment instruments under the Capital Markets Act (Cho 2012).

Carbon emission allowances will also fall under the category of securities accordingly. Article 4(1) of the Capital Markets Act defines the term securities as financial investment instruments issued by a citizen of Korea or a foreigner, for which investors do not owe any obligation to pay anything further on any ground, in addition to the money or similar that the investors paid at the time of acquiring such instruments. Accordingly, nationality of an issuer of securities, characteristics of financial investment instruments, and full payment obligations with the absence of additional payment obligations will be considered as the requirements for an investment to qualify as securities (Cho 2012). Provided in the KETS Act Article 20, both domestic and foreign corporations are entitled to register their carbon emission allowances. Characteristics of financial investment instruments do exist in carbon emission allowances as discussed above, and an investor's right to the allowances will be generally recognized if they pay in full for transactions and no additional payment is required for acquisition of the allowances (Cho 2012). Accordingly, once traded at the KRX, carbon emission allowances will surely qualify as financial investment instruments.

3 Definitions of Investments

Taking into account a legal character of carbon emission allowances as financial investment instruments, this paper will now review definitions of investments in major IIAs binding the Korean regulatory authorities and foreign investors, and determine whether carbon emission allowances, characterized as financial investment instruments, constitute covered investments according to those IIAs. While legal status of carbon emission allowances under the agreements of the World Trade Organization (WTO) has been discussed by several commentators extensively since ratification of the Kyoto Protocol in 1997 (Vranes 2009; Werksman 1999), its status under international investment regimes has not been discussed sufficiently. Most recently, characterization of "carbon credits" under the United States Model Bilateral Investment Treaty (hereinafter the US Model BIT) was discussed to a certain degree (Bennett 2010), but actual investment treaties of the

ETS countries have not been reviewed thoroughly so far. Hence, this paper will critically analyze whether carbon emission allowances in an ETS country, in this case the Republic of Korea, are bound by the country's investment treaties enabling foreign investors to initiate ISDS procedures based on any harm or damage done to those allowances.

3.1 Definitions of Investments in ISDS Cases

An investment is referred to as part of the *ratione materiae* element of an investor-State claim based on a bilateral investment treaty (BIT) or an investment chapter integrated in an FTA, and its existence determines jurisdictional issues in investor-State arbitration tribunals (Schefer 2013). Article 25 of the Convention on the Settlement of Investment Disputes between States and Nationals of Other States (hereinafter ICSID Convention), the most frequently used arbitral forum worldwide for ISDS cases, does not define the term investment in its text itself but provides that the jurisdiction of ICSID extends to any legal dispute arising directly out of an investment.

For definition of the term investment, the ICSID tribunal in *Salini v. Morocco* established a four-element test, which has become widely known as the *Salini* test, requiring an investment to feature (1) "contribution of an asset," (2) "a certain duration of performance of the contract," (3) "a participation in the risks of the transaction," and (4) "the contribution to the economic development of the host State of the investment" (Salini Construttori SPA and Italstrade SPA 2001). The tribunal in *Malaysian Historical Salvors v. Malaysia* also included a certain "regularity of profit and return" in addition to the four elements of the *Salini* criteria, quoting Professor Christoph Schreuer's note in his book (Malaysian Historical Salvors Sdn Bhd 2001). The *Salini* test has been most widely relied upon by not only ICSID tribunals[5] but also non-ICSID tribunals,[6] along with the continuing debate over whether a contribution to the host State's economic development constitutes a definitive criterion for defining an investment (Schefer 2013). It is widely accepted that claimants before ICSID tribunals must demonstrate that their activities amount to an investment under both the ICSID Convention and the applicable BIT, and this is referred to as the so-called double keyhole or "double-barrelled approach" (Schefer 2013).

Characteristics of carbon emission allowances seem to satisfy all of the elements required by the *Salini* criteria. For the first element concerning a contribution of an asset, some amount of "financial outlay" or "technical transfer" would be necessary for an investor to claim its own activity as investment (Schefer 2013). While there

[5] See, for instance, Bayindir Insaat Turizm Ticaret Ve Sanayi A.S. v. Islamic Republic of Pakistan (2009).

[6] See, for instance, Romak Switzerland v. the Republic of Uzbekistan (2009).

is no minimum threshold amount of contribution set by the ICSID Convention,[7] the ICSID tribunal in the *Fedax* case found even six promissory notes worth US $598,950 as investments as well (Fedax NV 1998). Accordingly, it is not next to impossible for carbon emission allowances to meet this criteria. For the second element requiring a certain duration, the fact that carbon emission allowances are allocated in a 5-year period according to the KETS Act should be taken into account. In the absence of a clear-cut threshold for a sufficient duration, this 5-year period may be sufficient since the early draft provision of the ICSID Convention, reflecting the negotiating history of the current ICSID Convention, defined an investment as "any contribution for not less than five years" (Bennett 2010; Delaume 1986). For the third element pertaining to assumption of risk, purchase of carbon emission units does involve assumption of risk as there is always a possibility that the carbon market declines and carbon emission units lose their value. This risk factor was also discussed in the previous section defining carbon emission allowances as financial investment instruments under the Korean domestic law. For the fourth element regarding contribution to the host State's economic development, the World Bank recognized in its recent report that the annual benefits of key sector policies including climate change mitigation measures would lead to an estimated gross domestic product (GDP) growth of between US $1.8 trillion and $2.6 trillion by 2030 (Akbar et al. 2014), and emission trading schemes such as the KETS are apparently national key sector policies with the aim of tackling climate change in accordance with the Kyoto Protocol.

In conclusion, it is evident that carbon emission allowances will qualify as investments under the *Salini* criteria in most cases under both ICSID and non-ICSID tribunals. Acknowledging that the so-called double-barrelled approach, recognizing jurisdiction requirements of the objective criteria established by case law as well as those of the treaty-specific criteria, is generally applied for an ICSID tribunal to declare its jurisdiction over investments at issue, this paper will now shift its focus toward the treaty provisions providing definitions of investments in the existing IIAs. These provisions will be discussed in the following section allocated for treaty-specific definitions of investments in major IIAs.

3.2 Treaty-Specific Definitions of Investments

This paper will now review treaty-specific definitions of investments in major IIAs, with emphasis on those involving the Republic of Korea in particular, starting from the two FTAs recently concluded by Korea with Australia and Canada. Furthermore, those drafted by the US and the EU, the two home States of investors for 426 cases or 75 % of all known ISDS claims as of June 2014 (UNCTAD 2014), will

[7] An early draft provision of the ICSID Convention considered a threshold of US $100,000, which was eventually rejected. See 2 ICSID, History of the ICSID Convention 34 (1968).

also be taken into account, through case studies of the Korea-US FTA (KORUS FTA) and the EU-Canada Comprehensive Economic and Trade Agreement (CETA). Last but not least, this paper will also review the Korea-Belgium/Luxembourg BIT, the very BIT that thrust on the Korean government a multi-billion dollar ISDS case. This paper preliminarily concludes that carbon emission allowances qualify as investments in all of these exemplary investment treaties due to financial characteristics of carbon emission allowances, and that foreign investors may invoke or at least threaten to invoke these investment treaties to bring a legal claim against the host State in order to protect their carbon emission allowances from being affected by any legislative or policy changes pertaining to the KETS.

3.2.1 Korea-Australia FTA (KAFTA) and Korea-Canada FTA (KCFTA)

The two recently concluded FTAs provide very similar definitions of investment with only subtle differences. Both treaties require "the characteristics of an investment" including the commitment of capital or other resources, the expectation of gain or profit, or the assumption of risk (KAFTA 2014 and KCFTA 2014). While the KCFTA adds "a certain duration" as one of the characteristics, the KAFTA omits such a duration requirement (KCFTA 2014). In their illustrative list providing some forms of investment, both agreements provide financial investment instruments such as "shares, stock, and other forms of equity participation in an enterprise" and "futures, options, and other derivatives" as forms of investment (KAFTA 2014 and KCFTA 2014). While the KAFTA lists "licences, authorisations, permits and similar rights conferred pursuant to domestic law," the KCFTA does not (KAFTA 2014 and KCFTA 2014). On its footnote, Article 11.28 of the KAFTA indicates that "the nature and extent of the rights that the holder has under the law of the Party" determines whether a certain type of licence, authorization, permit or similar instrument has the characteristics of an investment (KAFTA 2014). Both definitions exclude a claim to payment that arises solely from commercial sale of goods and services. Most importantly, both agreements incorporate the ISDS provisions in the Section B of their respective investment chapters allowing their investors to bring a legal claim against the host State directly. Bearing in mind the aforementioned elements from the KAFTA and KCFTA, carbon emission allowances under the KETS certainly qualify as investments under the two agreements in their forms of financial investment instruments. The fact that a number of ICSID tribunals have found various types of financial investment instruments as investments "bolsters the conclusion" that carbon emission allowances will also be considered as investments (Bennett 2010). Furthermore, the footnote to the KAFTA also provides a possibility for a carbon emission allowance to take its form as a type of license, authorization or permit, and still qualify as an investment under the law of the Party, in this case the Korean Capital Markets Act. Even if no "right to pollute" is conferred by its public law, some rights will be conferred to the allowances as carbon credits due to their market value (Bennett 2010). In sum,

carbon emission allowances under the KETS feature all the characteristics of investments provided in the investment chapters of the two FTAs, and thus they constitute protected investments under the ISDS provisions of the two FTAs enabling investors to initiate an arbitration concerning their carbon emissions allowances.

One evolutionary feature of these two FTAs, however, underlines a relationship between investment protection and environmental protection, by inserting their own environment chapters. In particular, both KAFTA Article 18.1 and KCFTA Article 17.2 provide separate provisions pertaining to each Party's right to regulate and set levels of environmental protection. These provisions recognize the right of each Party to establish each Party's "own levels of environmental protection" and to "adopt or modify" relevant laws and policies respectively (KAFTA 2014 and KCFTA 2014). These provisions are followed by another provisions regarding multilateral environmental agreements (MEAs) to which both Parties are party, recognizing the value of those MEAs. In fact, Korea and Australia are the "contracting parties" of the Kyoto Protocol (UNFCCC 2014). Meanwhile, Canada ratified the protocol on February 16, 2005, but then formally withdrew from this MEA as of December 15, 2012, criticizing a lack of participation from major carbon emitting countries including the US (Environment Canada 2012). Bearing in mind the presence of such environment provisions, it is also worth noting that the investment chapters of the two agreements clearly define their relationship with other chapters. Article 11.2 of the KAFTA and Article 8.2 of the KCFTA provide that "the other Chapter prevails" in the event of an inconsistency between the investment chapter and another Chapter (KAFTA 2014 and KCFTA 2014). Foreign investors may be discouraged to invoke ISDS provisions to drag carbon emission allowances into investor-State disputes since such actions may conflict with those provisions in the environment chapters ensuring each Party's right to regulate and set their own levels of environmental protection through adopting or modifying domestic laws and policies. The KETS is the result of the Korean regulatory authority exercising its right to regulate. Hence, it remains to be seen whether it is the host State's right to regulate or an investor's right to bring an investment claim that outweighs the other when it comes to the matter of carbon emission allowances.

3.2.2 Korea-US FTA (KORUS FTA)

The investment chapter of the KORUS FTA defines an investment exactly the same as the KAFTA does. According to the Free Trade Agreement between the United States of America and the Republic of Korea, Section C, investment means "every asset that an investor owns or controls, directly or indirectly, that has the characteristics of an investment, including such characteristics as the commitment of capital or other resources, the expectation of gain or profit, or the assumption of risk" (KORUS FTA 2007). It seems the Korean negotiators referenced the text of the investment chapter of the KORUS FTA for the KAFTA (Shin 2013). As it was

the case under the KAFTA, carbon emission allowances of the KETS will also qualify as investments under the KORUS FTA and investors of both Parties will be able to bring legal challenges against the host States directly in accordance with the ISDS provisions provided in the agreement.

Interestingly enough, despite all the criticisms against this agreement for being too investor-friendly, it actually provides some substantial provisions promoting environmental protection. The KORUS FTA indeed provides the environment chapter, just like the two aforementioned FTAs, recognizing the right of each Party to establish its own levels of environmental protection.[8] Furthermore, this FTA also reaffirms in Article 20.3(2) that it is inappropriate to encourage trade or investment by weakening or reducing the protections afforded in its environmental laws. Moreover, in the event of any inconsistency between the investment chapter and another chapter, it is provided in Article 11.2(1) of the KORUS FTA that the other chapter shall prevail to the extent of inconsistency. In other words, the environment chapter shall prevail over the investment chapter if any inconsistency between the two occurs. Accordingly, it seems misguided to claim, as many critics did, that the KORUS FTA simply disregards environmental matters more bluntly than other FTAs (Park 2014a). Since carbon emission allowances are part of the KETS and the Kyoto Protocol in general, adopting or modifying domestic laws and policies concerning those allowances may be accepted as exercising the right of a host State to regulate environmental matters. However, this may not prevent foreign investors from initiating ISDS procedures in order to recover any harm or damage done to their carbon emission allowances, which can be regarded as their covered investments under the KORUS FTA anyway.

The recent ISDS claim initiated by the US private equity firm the Lone Star Funds, regardless of the fact that it is based on the ISDS provisions of the BIT with the Belgium-Luxembourg Economic Union instead of the KORUS FTA, sparked harsh criticisms from the Korean public and members of the National Assembly, and thus the Blue House and its cabinet members at the time promised to continue their discussion in an appropriate time with the US counterparts evaluating contentious issues over the investment chapter and its ISDS provisions in particular, but they purposefully used the term "re-discussion" instead of "re-negotiation" of the agreement (Lee 2013). In fact, the Korean Ministry of Trade, Industry and Energy (MOTIE) announced that the Korean delegation recently held a high-level meeting with its US counterpart for the implementation of the KORUS FTA, and it is reported that they discussed a possibility of adopting an "appeal mechanism" to the existing ISDS procedures instead of making amendments to the existing provisions, but failed to reach an agreement in the end (Park 2014b).

It is therefore very unlikely that the two negotiating representatives will amend any substantive clause pertaining to investments, in particular definition of investments. As a result, on the one hand, carbon emission allowances of the KETS will

[8] KORUS FTA Art. 11.10 titled "Investment and Environment" also provides that investment activity to be undertaken "in a manner sensitive to environmental concerns."

remain vulnerable to potential investor challenges invoking the ISDS provisions in the KORUS FTA. On the other hand, the presence of the environment chapter provides arbitrators of potential investor-State disputes a possibility to produce an award in favor of the environment-friendly host State. Considering the fact that the KORUS FTA incorporated some substantial revisions reflecting specific concerns of Korea in addition to the 2004 US Model BIT at the time, there is no doubt that the environment chapter does hold a significant meaning in terms of its relationship with the investment chapter. Nevertheless, putting aside the presence of the environment chapter, it is worrisome that the US investors are the most litigious investors in the realm of ISDS after all. Other than the total of all EU Member States, the US alone was present most frequently as the home State of its investors, in 127 ISDS cases constituting 22 % of all known disputes as of end 2013 (UNCTAD 2014).

3.2.3 EU-Canada Comprehensive Economic and Trade Agreement (CETA)

It is worth reviewing the EU-Canada Comprehensive Economic and Trade Agreement (CETA) from a Korean perspective due to the fact that the EU and Korea did not insert an investment chapter in their trade agreement, and that the existing BITs with the two EU Member States led Korea to deal with its first ISDS case as a respondent State. CETA is the first trade agreement with its investment chapter concluded by the EU on behalf of its individual Member States, and its consolidated version of all chapters is now available to the public for information purposes. This is considered by many commentators in the EU as an EU Model BIT (Hoffmeister and Alexandru 2014; Reinisch 2014). When it comes into force, this agreement will replace the existing BITs between the EU Member States and Canada based on the Treaty of Lisbon, which came into effect in 2009, transferring the investment competence to the EU, and its subsequent EU secondary law regulating the existing BITs.[9] It is accordingly an extremely relevant example that shows a glimpse of a Korea-EU bilateral investment treaty which will replace the existing BITs with the EU Member States in the future. In addition, the EU is, needless to say, the largest investor in Korea (Embassy of the Republic of Korea to the Kingdom of Belgium and the European Union 2014).

Article X.3 of the CETA defines the term investment as "every kind of asset" of which an investor has possession or control, directly or indirectly, featuring the "characteristics of an investment" including "a certain duration" and "the commitment of capital or other resources," "the expectation of gain or profit," or "the assumption of risk" (European Commission 2014). This provision evidently

[9] This secondary law refers to the Regulation (EU) No. 1219/2012 of the European Parliament and of the Council of establishing transitional arrangements for bilateral investment agreements between Member States and third countries.

resembles the *Salini* criteria. Its illustrative list of investment forms includes not only an enterprise but also financial instruments such as shares, stocks, bonds, debentures and claims to money. Article X.3, however, explicitly excludes claims to money that arise solely from "commercial contracts", "domestic financing of such contracts", or "any related order, judgment, or arbitral award" (European Commission 2014). This could be regarded as a "manifestation of the political will" of the EU and Canada to create an "additional hurdle" so as to guarantee only true investments to be covered within the ambit of investment protection provided under this agreement (Reinisch 2014). It is also worth note-taking that this definition includes the expectation of gain or profit as one of the elements, instead of "the contribution to the host State's economic development," which has been the most controversial feature of the *Salini* test (Salini Construttori SPA and Italstrade SPA 2001). Definition of investment in the CETA, in this context, is evidently limiting its scope and coverage and thus it is not necessarily broader than the objective criteria applied in a large number of ICSID cases since the advent of the *Salini* test. Based on such definition, an investor may bring an ISDS claim to arbitration in accordance with Section 6 titled "Investor-State Dispute Settlement" of the investment chapter (European Commission 2014).

In spite of its narrow definition of investment provided in the CETA, carbon emission allowances would definitely qualify as investments. The allowances certainly possess characteristics of investments in terms of duration, commitment of capital or other resources, as well as assumption of risk, which are similarly required by the *Salini* criteria. With regard to expectation of gain or profit, it is an established criterion, as witnessed in the KAFTA, KCFTA and KORUS FTA, which is usually assumed in financial investment instruments. Furthermore, unlike the aforementioned FTAs, the CETA does not list futures, options, and other derivatives as illustrated forms of investment, but it does not explicitly exclude such forms either. Such forms of investment may be thus considered as investments under the CETA due to a non-exhaustive nature of the illustrative list for those forms of investment. In fact, the CETA Article X.02(2) does provide a general exception clause resembling the General Agreement on Tariffs and Trade (GATT) Article XX, enabling a Party to adopt or enforce environmental measures necessary to "protect human, animal, or plant life or health," but this does not preclude carbon emission allowances from being considered as investments defined in the agreement (European Commission 2014). In this sense, carbon emission allowances under the KETS, with their strong characteristics of financial investment instruments, will qualify as investments under a Korea-EU bilateral investment treaty if its text adopts definitions provided in the CETA as its model BIT.

3.2.4 Korea-Belgium/Luxembourg BIT

Korea-Belgium/Luxembourg BIT provides by far the most expansive definition of investments applicable to the Korean government and investors. According to this BIT, the term "investments" simply refers to "every kind of asset owned or

controlled, directly or indirectly, by an investor" and its forms may include "shares in, stocks and debentures of, and any other form of participation, including minority ones, in a company or any business enterprise and rights or interest derived therefrom" as well as "claims to money or to any performance under a contract having an economic value" (Korea-Belgium/Luxembourg BIT 2006). Contrary to the aforementioned investment chapters of the FTAs, this BIT does not even specify characteristics of investments required in terms of expectation of gain or profit, a certain duration nor assumption of risk. This definition explicitly empowers minority shareholders in a company or any business enterprise to seek protection under the BIT. Moreover, contrary to the CETA explicitly excluding commercial contracts from "claims to money" in Article X.3 (European Commission 2014), this BIT does not even attempt to provide such exceptions. In this sense, carbon emission allowances of the KETS, without a single doubt, qualify as investments according to this expansive definition of investments under the Korea-Belgium/Luxembourg BIT. This BIT is indeed an investor haven where foreign investors, even including minority shareholders, are qualified to initiate investor-State disputes. It is thus not surprising to find out that the Lone Star Funds decided to invoke this particular BIT through its shareholders residing in Belgium, instead of the KORUS FTA protecting the Lone Star's place of incorporation.

4 Disputes Over ETS and Carbon Emission Allowances

From the most recently concluded FTAs with Australia and Canada to the most controversial BIT with the Belgium-Luxembourg Economic Union, carbon emission allowances under the KETS, characterized as financial investment instruments under the applicable domestic laws of Korea, fit into all of their definitions of investments. Bearing this in mind, this paper now shifts its focus to the question how plausible it is to see carbon emission allowances in investment disputes. In order to do so, this paper first looks into specific cases involving the EU ETS before the Court of Justice of the European Union (CJEU) where the EU ETS was targeted as the source of such disputes.

The European Court of Justice (ECJ), a predecessor of the CJEU, dealt with the question whether the ETS Directive can cover the steel sector in the EU ETS while leaving the chemical and aluminum sectors outside of its scope in Arcelor SA v. European Parliament and Council. This case did not concern the application of a certain BIT, but the ECJ did review the relations between measures adopted by the EU institutions and France, pursuant to the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. The ECJ evaluated a number of "investment disciplines" including non-discrimination, the right to property, the right to the pursuit of an economic activity and the right of establishment (Viñuales 2012). In *US Steel Kosice v. Commission*, the main steel producer in the Slovak Republic complained about forceful pressure by the EU Commission authorities to reduce the amount of emission allowances in its national allocation

plan (NAP). ECJ dismissed the claims as the applicant had not established that the challenged decisions had a direct legal effect on it.[10] This case is worth noting since the State's "margin of maneuver" in making the final allocation enabled a potential claim for breach of investment disciplines (Viñuales 2012).

These cases involving application of the ETS and allocation of carbon emission allowances clearly demonstrate that similar claims can be brought under ISDS cases if claimants successfully prove that their allowances constitute investments under applicable BITs or investment chapters of FTAs. In order for carbon emission allowances to qualify as investments, however, contribution of an asset is required as one of its characteristics under the *Salini* criteria, and this condition will be satisfied only when business entities actually purchase the allowances from other entities. Those allocated free of charge in the first place may not qualify as investments. In fact, Australia was once threatened by Hong Kong's CLP Holdings Ltd., the owner of the Australian power generators, claiming that they would be faced with a "legal challenge" under the Australia-Hong Kong BIT[11] if the level of free emission permits granted to those generators proposed by the Australian government is not tripled (Smith 2009). Such a claim should not be taken into account lightly since this obsolete BIT, concluded in 1993, has already cut a path for the tobacco giant Philip Morris to bring a legal challenge against the Australian government's plain packaging legislation for enhancing public health.[12]

The incidents above suggest that any investor protected under a BIT or an FTA between its home State and Korea may also invoke, or at least threaten to invoke, ISDS provisions under the existing IIAs to have their investment disputes settled through arbitration if they perceive any regulatory or policy change in the KETS as unfavorable toward their investments. Among the major FTAs and BITs concluded by Korea, the Korea-Belgium/Luxembourg BIT, enabling even minority shareholders to initiate an investment arbitration claim against host States, definitely will be most frequently invoked by foreign investors to bring such a claim.

5 Potential Investor-State Disputes: Hypothetical Scenarios

This paper has so far developed a legal reasoning on a possibility for foreign investors to claim their carbon emission allowances as their covered investments under the existing IIAs and challenge a host State's regulatory measure on their carbon emission allowances through ISDS procedures accordingly. Should investor-State disputes over carbon emission allowances occur, their legal disputes

[10] See US Steel Kosice v. Commission (2007a) and US Steel Kosice v. Commission (2007b) for more details.

[11] This BIT refers to the Agreement Between the Government of Hong Kong and the Government of Australia for the Promotion and Protection of Investments on September 15, 1993.

[12] For more details, see *Philip Morris Asia Limited v. The Commonwealth of Australia* (2011).

will be similar to those of other investor-State disputes. This section is dedicated to depict some hypothetical scenarios in which a certain regulatory measure of a host State affecting carbon emission allowances of foreign investors conflicts with major investment principles.

A taking of carbon emission allowances by host States may constitute expropriation. The legality of a measure of expropriation generally involves three or four requirements and they are considered as part of "customary international law" (Dolzer and Schreuer 2008). These requirements usually involve a "public purpose," a "non-arbitrary" and "non-discriminatory" nature, "due process" and "prompt, adequate, and effective compensation" (Dolzer and Schreuer 2008), and similar requirements are conditioned on the major IIAs reviewed above.[13] Many FTAs and BITs, including those reviewed in this paper, refer to both direct and indirect expropriation. The least likely and the most extreme scenario on expropriation is a host State's decision to repeal its ETS legislation as its entirety and nationalize carbon emission allowances provided to foreign investors all at once. This will definitely constitute direct or formal expropriation. A more likely scenario may take its form as indirect expropriation instead by i.e. a host State's subtle, or indirect, devaluation of carbon emission allowances allocated to and traded by foreign investors. This may involve setting a stricter price ceiling on carbon trading or injecting more allowances to its carbon trading market so as to depress inflation. Such measures may cause effects equivalent or tantamount to expropriation and these measures will constitute indirect expropriation accordingly.[14]

The aforementioned hypothetical scenarios may also involve the non-discrimination principles—national treatment and most-favored-nation (MFN) treatment—if such measures take place in a discriminatory manner against carbon emission allowances in like circumstances. National treatment ensures that foreign investors and their investments are accorded treatment "no less favorable" than that which the host state accords to its own investors (Dolzer and Schreuer 2008). This standard generally applies to those in like circumstances, such circumstances have been interpreted quite broadly as the same sector incorporating the concepts of both "economic sector" and "business sector" (SD Myers 2001). Hence, almost all carbon emission allowances will be considered by arbitration tribunals as in like circumstances. Given this situation, any policy or regulatory measure that treats carbon emission allowances of foreign investors less favorable, i.e. imposing price discrimination or quantitative restrictions specifically on those of foreign investors, will be regarded as violation of national treatment. If such a measure leads to discrimination between different carbon emission allowances allocated to different foreign investors, violation of MFN treatment will be also an issue at arbitration tribunals.[15]

[13] See KAFTA Art. 11.7(1); KCFTA Art. 8.11(1); KORUS FTA Art. 11.6(1); CETA Art. X.11(1); Korea-Belgium/Luxembourg BIT Art. 5.

[14] For a general discussion on the requirements of expropriation, see Dolzer and Schreuer (2008).

[15] For MFN treatment clauses, see KAFTA Art. 11.4; KCFTA Art. 8.4; KORUS FTA Art. 11.4; CETA Art. X.7; Korea-Belgium/Luxembourg BIT Art. 3.

Last, but not least, minimum standard of treatment, incorporating the concepts of 'fair and equitable treatment' and 'full protection and security' may also play a significant role in potential investor-State dispute over carbon emission allowances.[16] In general, fair and equitable treatment refers to a host State's obligation not to deny justice in criminal, civil, or administrative adjudicatory proceedings in accordance with the principle of due process, and full protection and security obligates a host State to provide the level of police protection required by customary international law. In other words, denial of justice in domestic courts of a host State concerning legal disputes over carbon emission allowances may fall under the category of the former, and providing police protection for carbon trading markets such as the KRX may fall under the category of the latter.

Bearing in mind the aforementioned scenarios are hypothetical and unprecedented, arbitration tribunals may deal with such cases in a non-traditional manner. In other words, their decisions will be highly unpredictable and inconsistent. This volatility may discourage some risk-averse foreign investors from initiating ISDS procedures in the first place, but encourage other risk-taking foreign investors to protect their carbon emission allowances from policy or regulatory changes of host States in a more aggressive manner.

6 Conclusion

Republic of Korea has been an early adopter of international economic trends with a two-pronged approach, concluding BITs and FTAs with ISDS provisions on the one hand, and implementing low-carbon green growth initiatives such the KETS on the other hand. With the increasing number of investor-State disputes on a collision course with environmental regulations imposed by national governments with their aim of environmental protection, however, such a pursuit may restrain itself in terms of regulatory power, especially over environmental regulations, and let foreign investors to exploit those IIAs to maximize their interests regardless of low-carbon green growth initiatives.

From a host State perspective, the Korean government may face an increasing number of investors, protected by the recently concluded BITs and FTAs, challenging its domestic laws and policies regarding its climate change mitigation measures including the KETS. Meanwhile, Australia is not only a host State of the ISDS dispute over its plain packaging legislation, but also a home State of its investor's US $315 million ISDS claim against El Salvador's moratorium on gold mining in the country.[17] Canada was once the home State of this claim until the Australian company *OceanaGold* acquired *Pacific Rim Cayman LLC* in November

[16] For minimum standard of treatment, see KAFTA Art. 11.5; KCFTA Art. 8.5; KORUS FTA Art. 11.5; CETA Art. X.9; Korea-Belgium/Luxembourg BIT Art. 2.

[17] This is the case in *Pac Rim Cayman* LLC *v. Republic of El Salvador* (2009).

2013 (Bunyan 2014). Canada was also a host State of 3 ISDS cases and a home state of 32 ISDS cases in 2013 according the UNCTAD report (UNCTAD 2014). Moreover, it is also reported that investors of the US and the EU compose 75 % of all known investment disputes as of June 2014 (UNCTAD 2014). With such a litigious attitude of foreign investors toward investor-State disputes, the KETS may also be preyed upon sooner or later based on the existing IIAs.

From a home State perspective, it is worth noting that a Korean construction contractor recently sued the Chinese government and this is going to be the first time for Korea to become a home State of all known ISDS claims.[18] This landmark case will raise Korean investors' awareness in their opportunities for invoking ISDS provisions under the existing BITs and FTAs so as to recover financial loss. Investor-friendly investment treaties, in this sense, would be a double-edged sword for Korea.

The Korean government, therefore, should always pay attention to how their environmental regulations, including the KETS, may encounter ISDS claims based on the existing investment treaties. Despite the fact that carbon emission allowances of the KETS fall under definitions of investments in the existing IIAs, the presence of the environment chapters under KAFTA, KCFTA and KORUS FTA recognizing each Party's right to regulate and set its own level of environmental protection, as well as those general exception clauses provided in the CETA may discourage foreign investors from bringing unprecedented claims over carbon emission allowances at the expense of their time and efforts. Narrowing a scope of definition of investments, as it was the case for the CETA, in the future negotiations for BITs and FTAs will help discourage foreign investors further from bringing such claims. These options, however, come at the expense of those Korean investors overseas looking for more investment protection from IIAs, bearing in mind increasing amount of foreign direct investment "outflow" in recent years (Song 2014).

Potential investment disputes over carbon emission allowances similar to the hypothetical scenarios mentioned above may encourage some risk-taking investors to take advantage of not-yet-established standards of treatment toward carbon emission allowances under the existing IIAs. Hence, it is imperative for Korea, as well as other potential ETS countries, to make allowances for carbon emission allowances in potential investor-State disputes. Specifically, they should connect the dots between carbon emission allowances and foreign investments and be prepared for potential investor-State disputes involving the two. Or else, they will find themselves in a lose-lose situation where they should relinquish their regulatory power over emission trading scheme and fail to achieve their environmental objectives simultaneously.

[18] This case is known as *Ansung Housing Co., Ltd. v. People's Republic of China* (2014). It is reported unofficially that the first investment treaty arbitration ever brought by a Korean investor against a foreign state is actually a Korean construction company's claim against a state in North Africa.

References

Agreement between the Government of the Republic of Korea and the Belgium-Luxembourg Economic Union for the Reciprocal Promotion and Protection of Investments (12 Dec 2006)

Akbar S et al (2014) Climate-Smart Development: Adding up the Benefits of Actions that Help Build Prosperity, End Poverty and Combat Climate Change: xix. http://www-wds.worldbank.org/external/default/WDSContent Server/WDSP/IB/2014/06/20/000456286_20140620100846/Rendered/PDF/889080WP0v10RE0Smart0Development0Ma.pdf

Ansung Housing Co., Ltd. v. People's Republic of China (2014) International Centre for Settlement of Investment Disputes, Case No. ARB/14/25

Arcelor SA v. European Parliament and Council (2010) General Court (Third Chamber), Case T-16/04

Bayindir Insaat Turizm Ticaret Ve Sanayi A.S. v. Islamic Republic of Pakistan (2009) International Centre for Settlement of Investment Disputes, Case No. ARB/03/29. http://www.italaw.com/documents/Bayandiraward.pdf. Accessed 20 July 2015

Bennett L (2010) Are tradable carbon emissions credits investments? Characterization and ramifications under international investment law. N Y Univ Law Rev 85(5):1593–1599

Bunyan J (2014) Environmental Regulation and Investor State Dispute Settlement Clauses – OceanaGold and El Salvador. Greenberg Traurig. http://www.gtlaw-environmentalandenergy.com/2014/11/articles/environment/environmental-regulation-and-investor-state-dispute-settlement-clauses

Cho HJ (2012) A Legal Study on Emissions Trading Scheme. Dissertation, Graduate School of Law, Yonsei University (in Korean)

Colt Industries Corporation v. Republic of Korea (1984) International Centre for Settlement of Investment Disputes, Case No. ARB/84/2

Delaume GR (1986) ICSID and the transnational financial community. ICSID Rev 1(2):237–256

Dolzer R, Schreuer C (2008) Principles of international investment law. Oxford University Press, Oxford

Embassy of the Republic of Korea to the Kingdom of Belgium and the European Union (2014) Korea-EU Economic Relations. http://bel.mofa.go.kr/english/eu/bel/bilateral/eu/index.jsp

Environment Canada (2012) A Climate Change Plan for the Purposes of the Kyoto Protocol Implementation Act 2012. http://www.ec.gc.ca/Publications/default.asp?lang=En&n=EE4F06AE-1&xml=EE4F06AE-13EF-453B-B633-FCB3BAECEB4F& offset=3&toc=show

European Union (2003) Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003: Establishing a Scheme for Greenhouse Gas Emission Allowance Trading within the Community and Amending Council Directive 96/61/EC. Official Journal of the European Union, L 275/32

European Commission (2014) Consolidated CETA Text. http://trade.ec.europa.eu/doclib/docs/2014/september/tradoc_152806.pdf

Fedax NV v. Republic of Venezuela (1998) International Centre for Settlement of Investment Disputes, Case No. ARB/96/3. http://www.italaw.com/sites/default/files/case-documents/ita0316_0.pdf

Free Trade Agreement between the Government of the Republic of Korea and the Government of Australia (8 Apr 2014)

Free Trade Agreement between the Republic of Korea and Canada (22 Sep 2014)

Free Trade Agreement between the United States of America and the Republic of Korea (30 Jun 2007)

Hoffmeister F, Alexandru G (2014) A first glimpse of light on the emerging invisible EU model BIT. J World Invest Trade 15(3–4):379–401

International Emissions Trading Association (2013) The World's Carbon Markets: A Case Study Guide to Emissions Trading – South Korea. http://www.ieta.org/assets/Reports/EmissionsTradingAroundTheWorld/edf_ieta_korea_case_study_may_2013.pdf

Kang HH (2010) A legal study on the carbon emission right trading system. Environ Law Rev 32 (2):99–131 (in Korean)
Lee JH (2009) Economic Effects of the Emissions Trading Scheme. SERI Economic Focus, 266. http://www.seri.org/db/dbReptV.html?menu=db03&pubkey=db20091103001 (in Korean)
Lee J (2013) Back on the Negotiating Table Again? – Recalibrating Provisions of the Korea-U.S. FTA ISDS Proceedings through a Prospective 'Amendment' – Korean Forum on International Trade and Business Law 23(1):173 (in Korean)
LSF-KEB Holdings SCA and others v. Republic of Korea (2012) International Centre for Settlement of Investment Disputes, Case No. ARB/12/37
Malaysian Historical Salvors Sdn Bhd v. the Government of Malaysia (2001) International Centre for Settlement of Investment Disputes, Case No. ARB/05/10 http://www.italaw.com/sites/default/files/case-documents/ita0074.pdf
Metalclad Corp. v. United Mexican States (2001) International Centre for Settlement of Investment Disputes, Case No. ARB (AF)/97/1; 40 I.L.M. 36
Methanex Corp. v. United States (2005) United Nations Commission on International Trade Law, 44 I.L.M. 1345
Ministry of Environment of the Republic of Korea (2014) Designate Korea Exchange Inc. as Emission Permits Exchange. http://eng.me.go.kr/eng/web/board/read.do?menuId=21&boardMasterId=522&boardId=338102&searchKey=titleOrContent&searchValue=KRX
Pac Rim Cayman LLC v. Republic of El Salvador (2009) International Centre for Settlement of Investment Disputes, Case No. ARB/09/12. http://www.italaw.com/sites/default/files/case-documents/ita0591_0.pdf
Park DY (2014a) The investment chapter of the Korea-US FTA and its implications for environmental matters. J Arbitr Stud 24(1):25–44 (in Korean)
Park JH (2014b) Korea, US Evaluate Current State of FTA. Business Korea. http://www.businesskorea.co.kr/article/7490/korus-fta-korea-us-evaluate-current-state-fta
Philip Morris Asia Limited v. The Commonwealth of Australia (2011) United Nations Commission on International Trade Law, PCA Case No. 2012-12. http://www.italaw.com/sites/default/files/case-documents/ita0665.pdf
Reinisch A (2014) Putting pieces together … an EU model BIT? J World Invest Trade 15 (3–4):679–704
Romak Switzerland v. the Republic of Uzbekistan (2009) United Nations Commission on International Trade Law, PCA Case No. AA280. http://www.italaw.com/sites/default/files/case-documents/ita0716.pdf
Salini Construttori SPA and Italstrade SPA v. the Kingdom of Morocco (2001) International Centre for Settlement of Investment Disputes, Case No. ARB/00/4; 42 I.L.M. 609
Schefer KN (2013) International investment law: text, cases and materials. Edward Elgar, Cheltenham, UK & Northampton, MA, USA
SD Myers v. Canada (2001) United Nations Commission on International Trade Law, 40 ILM
Shin HT (2013) 10. Republic of Korea. In: Brown C, Krishan D (eds) Commentaries on selected model investment treaties. Oxford University Press, Oxford, pp 393–424
Smith P (2009) Canberra Faces Legal Challenges Over Carbon Scheme. Financial Times. http://www.ft.com/intl/cms/s/0/68c16c9a-d898-11de-b63a-00144feabdc0.html#axzz3M5cjEEge
Song SH (2014) BOK report raises red flag over FDI imbalance. Korea Joongang Daily. http://koreajoongangdaily.joins.com/news/article/article.aspx?aid=2995352&cloc=rss%7Cnews%7Cjoongangdaily
United Nations Conference on Trade and Development (2013) Recent Developments in Investor-State Dispute Settlement. http://unctad.org/en/PublicationsLibrary/webdiaepcb2013d3_en.pdf
United Nations Conference on Trade and Development (2014) Recent Developments in Investor-State Dispute Settlement. http://unctad.org/en/PublicationsLibrary/webdiaepcb2014d3_en.pdf
United Nations Framework Convention on Climate Change (2014) Status of Ratification of the Kyoto Protocol. http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php
US Steel Kosice v. Commission (2007a) Court of First Instance (Third Chamber), Case T-489/04

US Steel Kosice v. Commission (2007b) Court of First Instance (Third Chamber), Case T-27/07
Viñuales J (2012) Foreign investment and the environment in international law. Cambridge University Press, Cambridge
Vranes E (2009) Climate change and the WTO: EU emission trading and the WTO disciplines on trade in goods, services and investment protection. J World Trade 43:716–718
Werksman J (1999) Greenhouse gas emissions trading and the WTO. Rev Eur Commun Int Environ Law 8:252

‘The Good, the Bad, and the Ugly.’ Lessons on Methodology in Legal Analysis from the Recent WTO Litigation on Renewable Energy Subsidies

Luca Rubini

> Facci dunque uno principe di vincere e mantenere lo stato: e mezzi saranno sempre iudicati onorevoli e da ciascuno lodati (Machiavelli, *Il Principe*, 1532, Chapter XVIII).[1]

1 Subject of the Article

This article is about methodology in legal analysis. In particular, it is about the importance of integrity and coherence in legal methodology.

It is a fact that policy considerations may affect legal interpretation. While in some cases the regulatory framework may, expressly or on a proper construction, allow for this, in other cases it is not that responsive. If, in such cases, the adjudicator still follows policy pointers too far, she or he will inevitably commit errors in the legal analysis. The paradox is that these errors are functional to (and hence considered justified by) what is perceived as a good policy outcome for the case. In the eyes of the adjudicator they are good law. They lead to a just result. In other words, these errors are the price to pay to achieve a desirable solution. This is the essence of the known Macchiavellian adage: the end justifies the means. The effects of legal interpretation tweaking, however, might not be easily confined to the case at hand. Whatever precedential value judicial decisions have in their legal system, the interpretations they carry may have repercussions on future cases. More

Reproduced with the permission of publisher from Luca Rubini, The Good, the Bad, and the Ugly. Lessons on Methodology in Legal Analysis from the Recent WTO Litigation on Renewable Energy Subsidies, Journal of World Trade, volume 48 issue 5, pp. 895–938, 2014.

[1] ‘Let thus a prince have the credit of conquering and holding his state, the means will always be considered honest, and praised by everybody’, translation of the author.

L. Rubini (✉)
Reader in International Economic Law, School of Law, University of Birmingham, Edgbaston, Birmingham B152TT, UK
e-mail: l.rubini@bham.ac.uk

D.-Y. Park (ed.), *Legal Issues on Climate Change and International Trade Law*,
DOI 10.1007/978-3-319-29322-6_7

generally, the interpretations coming out of the settlement of one dispute may have implications for the legal system at large.

It is in this light that the claim that what matters in adjudication is a just outcome (assuming we know and agree on what it is) is considered, and balanced with another claim, that in legal analysis process and methodology matter, and are indeed more important than outcome. At its core, therefore, this article puts forward a normative claim, about how legal interpretation should (not) be performed, about its limits. If it is concluded that the current regulatory framework is insufficient, the inevitable corollary is the need for law reform.

These themes are addressed through a case study on the recent World Trade Organization (WTO) litigation on renewable energy subsidies which has attracted a lot of debate in academic and policy circles.[2] The *Canada-Renewable Energy/FIT* case was important because it provided both the Panel and Appellate Body with the opportunity to clarify key concepts of the definition of subsidy under Article 1 of the Subsidies and Countervailing Measures (SCM) Agreement and develop its jurisprudence. The significance of the disputes went beyond the green economy sector to affect the proper understanding and operation of the WTO system of subsidy control in itself. What *could have* emerged from these disputes was a well-balanced notion of subsidy, eventually clarified in all its constituent elements.

Section 2 outlines the case, also setting out its background and the policy discourse surrounding it. In Sect. 3, we go through the subsidy analysis, and in particular the benefit test, and we review the main steps in the reasoning of the Panel and Appellate Body. In doing so, we identify a few egregious errors in the legal and economic analysis. After this review, we address two doubts: the first, whether the whole litigation could in fact be considered a pantomime, the second whether, all in all, the decision should be looked at positively. The lessons for judicial methodology are presented in Sect. 4. Section 5 closes.

2 Introducing the Case Study: The Canada-Renewable Energy/FIT Disputes[3]

2.1 Background

The case involved a feed-in tariff ('FIT') enacted by the Canadian Province of Ontario ('Ontario FIT Programme'). A FIT is a scheme that pays guaranteed premium rates for set periods to electricity produced by renewable energy sources,

[2] Canada-Certain Measures Affecting the Renewable Energy Generation Sector (DS412); Canada-Measures Relating to the Feed-In Tariff Program (DS426), hereinafter Canada-Renewable Energy/FIT disputes.

[3] For a shorter preliminary commentary of the Canada-Renewable Energy/FIT case, see Cosbey and Rubini (2013).

in this case, solar PV and wind. Typical FITs also guarantee access to the distribution grid on specified terms. To be eligible for the premium rates, the electricity generated had to come from equipment that had some minimum level of domestic content that varied from technology to technology (levels ranged from 25 % for large wind projects to 60 % for some solar PV). This condition is known as local content requirement ('LCR').

In the panoply of the policy measures used to mitigate climate change, FITs are a very common incentive scheme. They are used in more than seventy-one countries and twenty-eight state/provinces worldwide (REN21 2013). Their aim is to ensure the rapid dissemination of renewable energy, and numerous studies indicate their effectiveness at achieving a rapid deployment of renewable energy generating capacity (Butler and Neuhoff 2008; Deutsche Bank 2010; Fouquet and Johansson 2008; Lipp 2007). In turn, a good record in capacity deployment is a good proxy of the environmental effectiveness of the measure.[4] Thus, in the light of both their objectives and results, FIT schemes are essentially an *environmental* measure.

The insertion of LCRs in climate change policy measures is common too (Hufbauer et al. 2013). An LCR is a condition that can be attached to some benefit (such as FITs) as a threshold condition, and is not fundamentally an environmental measure. It is rather an instrument of *industrial policy* that seeks to build up backward linkages in the domestic economy. Of course it can also be argued that the LCR is ultimately an environmental measure, since it is the 'grease' that makes the environmental measure to which it is attached possible. In a nutshell, the argument goes, without the promise of local jobs as a payback, it might be difficult to convince voters to back a plan that would see their power bills increasing. Especially in these times of fiscal restraint, it is difficult to sell environmental measures on their own, without also arguing that they will have clear economic benefits.

The Ontario FIT Programme was launched in October 2009. It was the third initiative adopted by the Canadian Province to increase the supply of electricity produced from renewable energy sources since 2004. Ontario, the most populous Canadian province, was the first in North America to implement a comprehensive FIT programme for renewable energy. Through this programme it aimed to diversify its energy-supply mix, in particular, by progressively phasing out coal-generated electricity and increasing the use of cleaner energy sources and technologies. Job-creation was also in the mind of the government. Through the LCR, Ontario sought to build up in-province capacity in the manufacturing sector that supplied the wind and solar PV generating sector. The FIT Programme was

[4] Although not necessarily of its cost-effectiveness. For any given regime of FITs it can indeed be asked whether the objective of deployment could be achieved at a lower cost by other policy measures.

successful in increasing capacity and attracting investment. Several large foreign companies were led to the province.[5]

From a trade perspective, the key question is whether policies like FITs and LCRs can distort trade (Bahar et al. 2013). In general, supply-side policies—when they do not favour domestic over foreign producers[6]—act to increase flows of trade and investment. They create new markets for goods and services from both domestic and foreign suppliers, and similarly encourage investment from both domestic and foreign sources. In short, if this is a distortion, it is a good one. What remains to be seen is whether, and under what circumstances, FITs could also cause negative externalities and affect cross-border trade in energy itself. Although LCRs almost always act as a condition for the receipt of some benefit (they are in a sense 'part and parcel' of the policy package), taken in isolation, they are expressly aimed at distorting trade and investment flows and have a clear and significant trade-distorting impact (Bahar et al. 2013). For this reason, they are expressly prohibited under WTO subsidy laws.

Against this background, it is interesting to note that challenges to energy subsidies (encompassing both fossil fuel and clean energy subsidies) have been laconically absent from the registers of WTO cases or national trade remedy investigations. This concerns both measures of support to energy production and to technology. This non-belligerence scenario can be largely explained with the low or even non-existent spillovers caused by these subsidies to the various trade, investment, and political interests at stake, combined with the known 'glasshouse' effect. Everybody gives subsidies in support of energy. Nobody is interested in raising a claim and risking a highly probable counterclaim. In other words, in what is certainly a simplified picture, the significant spread subsidization in the energy sector was tolerated until *new factors* were introduced which contributed in altering the equilibrium, in particular, by making competitors' subsidization harmful, igniting lobbies and special interests, and thus forcing governments to react. Renewable energy has increasingly become a key player in the energy market, in some cases almost reaching grid parity with conventional sources, and catalysing bigger economic, social, and political interests. Often courtesy of public support, technology has developed extremely quickly, prices have decreased dramatically, and market opportunities have blossomed. In this scenario, governments' tolerance level for foreign subsidization has decreased. Challenges have been initiated, in particular (but not exclusively), for the more obvious breaches of the rules of the game, through discriminatory elements like LCRs (Wu and Salzman 2014).

[5] Samsung, the South Korean giant made the more high-profile deal, leading a consortium that, just a few months after the entry into force of the programme, in January 2010, unveiled a CA$7 billion (USD 6.8 billion) investment in the province (Maclnnis 2010). According to the press, only 15 months after the programme started, a total of 2625 megawatts of FIT contracts had been signed, and many more projects were in the queue waiting for approval (Oxtoby 2011). In terms of job creation, Ontario's target was 50,000 green jobs, with 16,000 expected from Samsung's deal alone. Also as a consequence of the negative WTO ruling, many of these figures had to be scaled down. See also 'Ontario slashes Samsung deal following WTO ruling' (Campbell 2013).

[6] Domestic preference can be found in the purchase obligation of certain FIT schemes.

These few notes provide the general background of the challenge to the Ontario FIT Programme. This has seen the beginning of the significant WTO and domestic litigation that has since involved several 'green energy' subsidies. It is, however, interesting to consider the more fact-specific circumstances underlying this challenge.

In September 2010, the news that Japan had filed a WTO claim for Ontario FIT Programme raised some eyebrows. Only a few days after the lodging of the request for consultations, it was reported:

> Other experts say they think it is puzzling that Japan has decided to make its move now. Ontario's neighbouring province Quebec has had a local-procurement program for years for its energy development, they note, including rules that force power producers to buy equipment from specific regions inside the province. The Quebec policy has never drawn complaints from the Japanese, the source says.
>
> Some observers have speculated that Japan is targeting Ontario in the wake of a $7 billion contract given to Korean competitor Samsung by the Ontario government. Recently, Japanese companies - such as Sharp, Mitsubishi, and Kyocera - were on the losing end of a US$20 billion nuclear power deal in the United Arab Emirates. The Ontario deal could be perceived by Japan as a sign of losing ground in the green energy arena, some experts say.
>
> Under the agreement with Samsung, Ontario will provide the company with subsidies to establish a massive solar and wind energy capacity in the province. The government will support the company by providing preferential grid access, financial assistance, and land. The deal has been a boon to Samsung, which is vying to position itself as a major renewable energy player. Samsung, as part of the deal, will also establish a wind turbine facility and solar power production facility in Ontario.
>
> If Japan eventually wins its claim, it could be a blow for Ontario's alternative energy plans. The prices the province pays for green energy – for certain types of solar power it is almost 20 times the rate customers pay – can only be financially justified if Ontario gets significant employment benefits from new development (ICTSD 2010).

This vivid account tells a paradigmatic story of the current green economy, of the various stakes at issue, and of the frictions caused by public policy attempting to shape markets. It also exemplifies a scenario where the said 'glasshouse' effect does not constrain government's reaction anymore.

The EU and the US soon requested to join Japan in the consultations with Canada. Despite pressure from the domestic solar industry to act as co-complainant, the US preferred to simply maintain a third party status, worried of possible counter-challenges to its own support programmes (Inside US Trade 2011). As for the EU, reportedly after a failed attempt to reach a negotiated solution, it filed its own request for consultations on 11 August 2011. On various occasions, the EU highlighted both trade interests and systemic concerns as to the correct application of WTO law, as motives underlying its challenge. It emphasized its role as a 'significant' exporter to Canada of wind power and solar PV generation equipment, with exports ranging from EUR 300 to EUR 600 million in the 2007–2009 period, adding that 'these figures could be higher should the local content requirements be removed from the legislation in question' (ICTSD 2011).

2.2 Outline of the Case

2.2.1 Claims

The disputes focus on the WTO-law consistency of the Ontario FIT programme.[7] In particular, Japan and the EU claimed that, by imposing the LCR on electricity generators using solar PV or wind power technology, the programme was incompatible with the prohibitions of:

(1) non-discrimination as laid down in the obligation of national treatment of Article III:4 of the General Agreement on Tariffs and Trade ('GATT') and Article 2.1 of the Agreement on Trade-Related Investment Measures ('TRIMs'), and
(2) local-content subsidies under Article 3 of Agreement on Subsidies and Countervailing Measures ('SCM Agreement').

It is worth highlighting that the focus of the two legal claims and the relevant analysis is partly different, with the first being concentrated on the legality of the LCR itself, and the latter on the classification of the FIT as a subsidy. In other words, a positive subsidy determination was the necessary and preliminary condition of a finding of the existence of a measure illegally conditional on localization. This is a crucial difference, and we will come back to it at length.

A Panel and then the Appellate Body heard the case. The reports were respectively issued on 19 December 2012 and 6 May 2013 and were adopted on 23 May 2013.[8]

[7] The Ontario FIT Programme was challenged also in the North-American Free Trade Agreement ('NAFTA'). In July 2011, the US-based renewable energy company Mesa Power Group filed a complaint under Ch. 11 of the NAFTA, claiming that the Canadian programme violated NAFTA's investment provision. The claimant runs various wind farm projects in south-western Ontario. Mesa Power alleged that Canada failed to accord it fair treatment by changing the rules of award of certain wind contracts as well as those governing the territorial limits for interconnection, by imposing content requirements and 'buy local' performance requirements, by providing more favourable transmission treatment to Canadian companies and local subsidiaries of Samsung. All this was alleged to amount to a breach of Ch. 11 national treatment and MFN obligations. As a consequence of the substantial loss and damage allegedly caused, Mesa Power sought compensation for no less than CND 775 million (Mesa Power Group, LLC v. Government of Canada 2011).

[8] On 20 Jun. 2013, Canada informed the DSB that it intended to implement the decision and that it required a reasonable period of time to do so. Canada, Japan, and the EU agreed that the reasonable period of time to implement the DSB's recommendations and rulings should have been 10 months, expiring on 24 Mar. 2014. At the time of writing, it looks like the DSB ruling has not been implemented yet and that an implementation claim is probable.

2.2.2 Findings

Both the Panel and the Appellate Body easily concluded that the LCR element of Ontario's programme breached the prohibition of non-discrimination.[9] This finding was not discredited by Canada's defence whereby the LCR could not be illegal because it was imposed as part of Ontario's purchasing of goods 'for governmental purposes' and not for commercial reasons. Article III:8(a) of the GATT reads that the prohibition of discrimination 'shall not apply to laws, regulations or requirements governing the procurement by governmental agencies of products purchased for governmental purposes and not with a view to commercial resale or with a view to use in the production of goods for commercial sale'.

As for the subsidy claim, a positive determination that the FIT was a subsidy was necessary to conclude that the programme was prohibited because it included the LCR element. The WTO legal definition of subsidy is made up of two parts. You need to have a 'financial contribution', in one of the forms of Article 1 of the SCM Agreement, or, alternatively, 'any form of income or price support'. In addition to this, the measure must confer a 'benefit'.

Both the Panel and the Appellate Body concluded that Ontario's FIT was a 'purchase of goods'. The focus then shifted to whether this purchase of goods could confer a 'benefit'—which is the crucial legal issue in the subsidy analysis and in this article. This issue was so controversial that the Panel was split, with one member issuing a separate opinion. The details of this dissent are outlined and commented below. For the purposes of this brief summary, it is sufficient to highlight that the Panel could not determine, on the basis of the various benchmarks put forward by the complaining parties, that Ontario's FIT conferred a benefit. Although with a partly and significantly different reasoning, this conclusion was substantially confirmed by the Appellate Body.

2.3 Policy Narratives

Two different policy narratives surrounded the case, notably:

– *Policy narrative 1*. Labour lobbies and green movements unreservedly supported Ontario's programme, and criticized the legal challenge and the WTO possible intrusions with what they perceived as a good policy.[10] This narrative does not distinguish between the two elements of the policy, i.e., the

[9] To do so, it was interestingly found that the mere participation in Ontario FIT Programme (of which the LCR was a necessary condition and prerequisite) did confer an 'advantage' on eligible generators.

[10] For example, Inside US Trade (2013) mentions a letter signed by twelve US environmental, public interest and other groups urging US Trade Representative Ron Kirk to back off from the third party participation of the US in the case.

FIT and the LCR, and looks at them as a single measure, good to achieve the 'twin goals' of reducing greenhouse gas emissions and transitioning to a clean energy economy.[11] Post-Panel reports claiming that WTO dispute settlement decisions are 'not binding' and Canada should 'ignore' them are a by-product of this narrative.[12]

– *Policy narrative 2*. During the legal proceedings the complainants continuously separated FITs, as good policy, from LCRs, as bad policy. It is the latter's discriminatory element—not the FIT—that troubled Japan and the EU (and many of the intervening third parties) and prompted the litigation (CBS News 2012).

Two comments can be made. First, the local and international political debate mingles with these narratives. The Green Energy Act and the Samsung deal were clearly the focus of the local provincial election (Howlett and D'Aliesio 2011) and may well have been considered by Canada as a barrier to the bilateral negotiations with the EU.[13] Second, the second narrative is closely reflected in the legal discussion and the outcome of the case. The national treatment route is explored up to its very end, with a rigorous prohibition of the LCR. Once this goal is achieved, the subsidy route is pursued only in so far as it is necessary to determine that there is not enough evidence to conclude that the FIT is a subsidy.

3 Law, Economics, Policy: A Matter of Methodology

Law is about giving sense to rules—by interpreting them. And, although it is widely accepted that interpretation is an 'act of construction of meaning',[14] this does not imply that the interpreter (essentially the judge) is completely free in this process. The general claim of this article is that methodology in legal analysis matters. This more specifically becomes a claim of integrity and coherence in legal reasoning. Furthermore, since when dealing with economic facts, legal analysis often needs to interact with economic analysis and expertise, it then becomes crucial to understand the respective roles of law and economics, and who (the lawyer or the economist)

[11] See also 'Environmental Groups Wary Of WTO Ruling On Canada Energy Program' (Inside US Trade 2013); 'Ontario's Feed-in Tariff: Will the WTO Trump Climate Imperatives?' (Public Citizen and Sierra Club 2013).

[12] See 'WTO Rules Ontario Green Energy Tariff Unfair' (CBS News 2012).

[13] Mr Van Loan (2010) specifically cited the Ontario government as a barrier to the Canada-EU negotiations and there can be no doubt that the high-profile FIT Programme was in Mr Van Loan's mind. It is worth recalling that the measure at issue is not a federal but a provincial one, for which, however, the government of Canada was responsible at the international plane.

[14] Borrowing from a classic account of legal interpretation in the European Union, whose insights certainly go beyond the European *milieu*, legal interpretation is not 'simply a reading of the text to see what it says, and following through the assumption that it means what it says'. (Bengoextea et al. 2001, pp. 43–44)

should perform the analysis and how this should be done. Finally, in the context of trade law, the interpretation of rules in judicial proceedings is functional to their application to specific measures that are the expression of given policy choices made by sovereign actors. This means that the anticipation and apprehension of certain policy outcomes may have an impact on legal interpretation. As this article attempts to show, this influence is negative when it clashes with a few basic methodological requirements.[15]

3.1 Momentous Steps, Egregious Errors

In this section we review the major steps in the legal reasoning of the *Canada-Renewable Energy/FIT* disputes. In the process, we outline a few egregious errors of methodology committed by the Panel and Appellate Body.

3.1.1 The First Legal Weakness: The Panel Majority's Compassion

The key argument of the Panel majority was that it was not possible to talk, or even think, of a competitive energy market in Ontario (and perhaps even elsewhere). Consequently, the various benchmarks put forward by Japan and the EU, all substantially relating to Ontario's wholesale electricity market, could not be appropriate Panel, 7.308. Similarly, the benchmarks based on what happened in other Canadian provinces or neighbouring US regions were not considered appropriate ibid; see also paras. 7.305–7.307.

Let us try to reconstruct this argument. The starting point is the recognition of Ontario's choice of energy supply-mix (more clean energy, based on renewable sources, less conventional, especially coal-based, energy) which depended on reliability of supply as well as environmental and human health considerations. The Panel majority then noted that *no* competitive market would, *even hypothetically*, attract the *type* of supply of energy the Canadian province sought. In other words, we are confronted with a 'public good' scenario, where the desired goods

[15] As the reader may have guessed, the discussion here does not relate to domestic common law systems. These are based on a judicial-law making process and the judge-interpreter enjoys a significant degree of freedom in constructing the law. Our claim and analysis focus on the interpretation of international treaties and rules that puts the judge-interpreter in a position closer to the domestic counterpart (in common and civil law systems alike) when interpreting domestic statutes or constitutions. The main difference is that in these cases the judge-interpreter has to work on rules that have been created by a legislator and cannot create them from scratch. Although, certainly, depending on the context, the degree of freedom enjoyed by the judge may vary whether she or he has to deal with a statute or a constitutional text, this variance does not detract from the point we wish to make. There is a fundamental difference between those scenarios where the interpreter is officially considered as a law creator and those where she or he acts as a more or less free (but still as an) interpreter.

(i.e., renewable energy) are under-provided in the absence of government intervention. Indeed, in the case at hand, all of this was common ground. Even the defendant conceded it:

> Canada accepts that 'most' of the contested FIT generators would be unable to conduct viable operations in a competitive wholesale market for electricity in Ontario. Indeed, Canada points out that one of the objectives of the FIT Programme was to encourage the construction of new renewable energy generation facilities that would not have otherwise existed (Panel, para. 7.277).

The change of gear in the reasoning of the Panel majority happens when they move from: (i) the inability of the market to achieve the desired public policy goals (which may in principle justify public action in the form of subsidization) to (ii) the impossibility to use the market as baseline for determining the existence of a benefit and hence a subsidy (a determination which simply classifies public intervention as a subsidy while not negating its need or challenging its justification). In other words, the Panel's majority approach confuses the two separate issues of the *existence* of a subsidy with its economic and policy *justification*, and conflates both within the context of what can be considered a preliminary step in the legal analysis, i.e., the definition of subsidy.

This combination of different considerations can be appreciated in the following quote:

> the complainants have not convinced us of the premise underlying their two main lines of benefit arguments, namely, that in the absence of the FIT Programme, the FIT generators would be faced with having to operate in a competitive wholesale electricity market. The evidence before us indicates that competitive wholesale electricity markets, although a theoretical possibility, will only rarely operate in a way that remunerates the mix of generators needed to secure a *reliable* electricity system with enough revenue to cover their all-in costs, let alone a system that pursues *human health and environmental* objectives through the inclusion of facilities using solar PV and wind technologies into the supply-mix (Panel, para. 7.309).

The first statement is simply wrong: but for government intervention, FIT generators would, by necessity, 'be faced with having to operate in a competitive wholesale electricity market'. They might conclude that this is not a profitable scenario and decide not to produce, but that is another story. Their counterfactual world would be a competitive one and, at the same time, one where the market fails to provide the desired public goods. But the two aspects are different and should thus be kept separate.

In sum, the 'compassion' of the Panel majority for the policy rationale underpinning Ontario FIT Programme is clear and raises fundamental issues of methodology in legal analysis. Legitimate policy goals need to be positively recognized in the rules (by the legislator), not forced through the normative fabric of rules (by the adjudicator). The bottom line is—WTO tribunals are courts of law, not equity.

3.1.2 The Dissenter's Call to Integrity

While the Panel's majority approach *conflated* the two separate issues of the *existence* of a subsidy with its economic and policy *justification*, the dissenting panellist was more sensitive to the need, and possibility, to keep market and policy considerations separate. The benefit should be determined only on the basis of the former, keeping the latter aside.

In particular, the dissenting panellist essentially opined that an appropriate benchmark could be found, even in a hypothetical competitive market, in the wholesale market that 'could' exist in Ontario.[16] Furthermore, he suggested that, even without embarking on the quest for a precise market benchmark, the fact itself that the FIT is there to 'facilitate' the development of certain technologies is indicative of the existence of a benefit (Panel, para. 9.3).

In various passages, he clearly stated this separation between subsidy existence and its justification, for example:

> The Panel majority concluded that the wholesale electricity market currently operating in Ontario cannot be used for the purpose of conducting the benefit analysis. In addition, the Panel majority found that the competitive wholesale electricity market that could, in theory, exist in Ontario could also not be used as a basis for the benefit analysis because, in the light of the prevailing conditions of supply and demand, such a market would fail to attract the generation capacity needed to secure a reliable supply of electricity for the people of Ontario [footnote omitted]. In my view, however, the fact that a competitive market might not exist in the absence of government intervention or that it may not achieve all of the objectives that a government would like it to achieve, does not mean it cannot be used for the purpose of conducting a benefit analysis. Indeed, it is because competitive markets do not often work the way that governments would like them to that governments will decide to influence market outcomes by, for example, becoming a market participant, regulating market participants or providing them with incentives (or creating disincentives) to behave in a particular way. A government might also choose to intervene in competitive market outcomes by granting subsidies, as defined in Article 1.1 of the SCM Agreement. Provided that such subsidies are not prohibited under Article 3 of the SCM Agreement, a government will be entitled to maintain such measures, subject to the remedies available to other WTO Members under Parts III and V of the SCM Agreement where either 'adverse effects' or 'material injury' is proven (Panel, paras. 9.5–9.6).

This sensitivity to the possibility, and need, to keep market and policy considerations separate, and determine whether Ontario FIT programme could confer a benefit only on the basis of the former is again a choice of methodology. It can be contrasted to the Panel majority's 'compassion'. It is a call to integrity in legal analysis.

In the 'no-nonsense' approach of the dissenting panellist, the Ontario FIT Programme represented, in its goal and effect, a deviation from what the electricity market, left to its own forces, would have provided, and this deviation was

[16] While conceding that the 'wholesale electricity market in Ontario does not allow for the discovery of a single market-clearing price established through the unconstrained forces of supply and demand', he noted that the 'competitive wholesale market for electricity that *could* exist in Ontario is the appropriate focus of the benefit analysis' (Panel, para. 9.3).

advantageous to the eligible wind and solar renewable energy generators. This is, in legal terms, a 'benefit'.[17] The objective of the benefit analysis, which is broadly the same as the definition of subsidy, is fairly simple. It is there to capture those measures that have the potential to distort trade. No more, no less. No comprehensive analysis to conclusively determine whether this potential has translated into actual harm is necessary; no consideration of the redeeming, even if legitimate, objectives of the measures is permitted.

The fact that the market is, even fundamentally, distorted, to the extent that the public hand artificially creates it, does not represent an obstacle to—but rather evidence for—the determination of the existence of a benefit. It is still the market standard that is at work, albeit in an extreme setting. From another perspective, the fact that a 'competitive market' producing the desired outcome does not exist (or even that it could not possibly exist), and that it is only because of government intervention that the desired 'public goods' are supplied, is in itself evidence of a subsidy scenario.

In short, it was indisputable, almost self-evident, that Ontario FIT Programme conferred a benefit and was a subsidy.

3.1.3 First Economic Misconception: The Panel's Alternative Test

The Panel majority did not simply reject the benchmarks put forward by the complainants. They also came out with their own benchmark. Using the market that currently exists in Ontario as universe of reference, the Panel majority noted:

> we are of the view that one approach to determining whether the challenged measures confer a benefit could be to compare the rate of return obtained by the FIT generators under the terms and conditions of the FIT ... with the average cost of capital in Canada for projects having a comparable risk profile in the same period (Panel, para. 7.323).

This test looks fundamentally wrong from an economic perspective. The risk profile of a comparable investment cannot be pertinent when, by definition, risk is not an issue in measures such as FITs that involve long-term (20 or 40 years) contracts. Moreover, this test is not particularly useful in practice. It is not clear how we might quantify the risk profile of this or any other sector, much less find sectors with similar risk profiles and derive the undistorted cost of capital faced by that sector.

This 'immediate and clear' test, expression of the 'simple standard' whereby 'rational distributors aim to minimize their costs and maximize their returns' (sic!)

[17] This is the same intuitive approach that the European Court of Justice did endorse in having to judge the German FIT of the *Stromeinspeisungsgesetz* in 2001: 'there is no dispute that an obligation to purchase electricity produced from renewable energy sources at minimum prices ... confers a certain economic advantage on producers of that type of electricity, since it guarantees them, with no risk, higher profits that they would make in its absence'. See the case PreussenElektra.

(Panel, para. 7.323), is the first economic misconception of the case. How could the Panel majority fall prey to such a gross misconception? It is again a matter of methodology. To the best of our knowledge, this test was not discussed at all during the litigation. No complainant put it forward. Nor, it seems, did any economist (even participating as an expert witness) endorse it. Where does it come from then? What mistake did the Panel majority make here? In lawyers playing economics.

3.1.4 Friendly (But Unwanted) Help

At this stage it may be useful to note that the Panel and the Appellate Body were not alone with the parties in scrutinizing Ontario FIT Programme. Various amici curiae submitted briefs at both levels of adjudication.

The status of briefs submitted to the Panel and the Appellate Body by non-parties (so-called amici curiae) is still controversial and, absent an express legal basis,[18] unclear. Consequently, the role they play is limited.[19] Despite this, it is, however, still common for Panels and the Appellate Body to receive 'unsolicited' briefs from individuals, companies, and organizations. This also happened in the *Canada-Renewable Energy/FIT* case. The Panel received two briefs from various organizations,[20] while two further briefs 'by an energy company and an academic' were submitted to the Appellate Body. Interestingly, the energy company that submitted the first brief is Mesa Power, the company that had started litigation against Canada in the NAFTA.[21] The 'academic' is this article's author.

Should Panels and the Appellate Body make more use of information coming from outside the WTO citadel? The utility of amicus curiae briefs and their ability to broaden the court's perspective seem to be difficult to deny. The question whether WTO dispute settlement organs (perhaps any adjudication body) may seek or in any case make use of information not coming from the parties can simply be solved within the contours of the principles of due process which, irrespective of any textual hook, should always apply (Howse 2001; Mavroidis 2001). The key is

[18] Arguments in favour of the authority to accept and consider written briefs submitted by amici curiae have been drawn mainly from Art. 13 of the Understanding on Rules and Procedures Governing the Settlement of Disputes, 'DSU' (which gives Panels the right to seek information), Art. 16 of the Working Procedures of the Appellate Body (which gives the latter the general power to adopt appropriate procedures for the purpose of the appeal), and Art. 17.9 of the DSU (which confers on the Appellate Body a broad authority to adopt procedural rules).

[19] At the time of writing, the Appellate Body has not considered it useful to consider amicus curiae briefs in any case. The record is better, but only slightly, for Panel's proceedings.

[20] The first was submitted by Blue Green Canada; the Canadian Auto Workers ('CAW'); the Communications, Energy and Paperworkers Union of Canada ('CEP'); the Canadian Federation of Students ('CFS'); the Council of Canadians; the Canadian Union of Public Employees ('CUPE'); and the Ontario Public Service Employees Union ('OPSEU'). The second was lodged by the following organizations: the International Institute for Sustainable Development ('IISD'); the Canadian Environmental Law Association ('CELA'); and Ecojustice Canada.

[21] See the footnote 8 above.

to safeguard the parties' prerogatives to react to the information and arguments presented by the amici.

The briefs submitted in the *Canada-Renewable Energy/FIT* cases touch on virtually all the issues raised in the two claims. Sometimes they even go beyond what was actually argued, extending for example to discuss the thorny issue of the applicability of GATT Article XX to subsidies, in a move which is quite telling about what was expected in terms of the legal outcome of the case (i.e., it was highly anticipated that the Panel and the Appellate Body would have concluded that the FIT was a subsidy and a prohibited one).

Neither the Panel nor the Appellate Body found it useful to consider the briefs submitted to them. It is, however, difficult to believe that this denial of interest should mean that the two judicial bodies did not react in one way or another to the arguments of the amici. Less so that they were all simply replicating the arguments of the parties and did not bring any 'relevant matter' to the attention of the adjudicating bodies.[22] If this is the case, transparency (leaving aside intellectual honesty) would have been better served by an explicit recognition of the role these submissions played (even if minimal) in the deliberation and reasoning. And it cannot be understood how this transparency could have prejudiced the parties' prerogatives (especially if due process requirements in the presentation and contestation of the information and arguments of the amici briefs were fully adhered to). All this indifference and denial may, again, count as an error in method.[23]

3.1.5 Second Economic-Legal Misconception: The Need to Consider Supply-Side

The Appellate Body introduced two important innovations with respect to the analysis of the benefit that may well have important implications for the legality of future policies in the area of clean energy (and perhaps even beyond).

The first innovation lies in the finding that the first analytical step of the benefit analysis is the definition of the relevant market. It is only when the product market is defined that the benchmark to be actually used in the benefit analysis can be identified. It is known that in antitrust the definition of the relevant market is the first and most important operation of the analysis that leads to establish whether the companies under investigation enjoy market power. Within this context, the goal of defining the market is to enquire whether the products or services at issue are substitutable with each other, and hence to ultimately determine whether the firm investigated faces any competitive constraint.

[22] See Rule 37 of the Supreme Court of the United States: 'An *amicus curiae* brief that brings to the attention of the Court relevant matter not already brought to its attention by the parties may be of considerable help to the Court. An *amicus curiae* brief that does not serve this purpose burdens the Court, and its filing is not favored'.

[23] For a similar criticism, see Charnovitz and Fischer (2015).

The Appellate Body's breakthrough is the full transplant of market-definition-antitrust-type analysis at the level of the definition of subsidy, when it comes to establishing whether the financial contribution at issue procures benefits to its recipients. In particular, the Appellate Body opines that energy markets need to be looked at from both the demand side and the supply side.

The preliminary question we have to ask is the following. Is the definition of the relevant market something that should be done in the benefit analysis? Market definition analysis was never used in benefit determinations before. This can probably be explained by the fact that the identification of the appropriate market benchmark was, in the main, clear. Even accepting that market definition is desirable, this should be done correctly. Antitrust people know that the definition of markets is a sensitive step. It fully determines the next steps of the analysis and the outcome of antitrust cases. It is also an uncertain, and hence pliable, exercise (Farrell and Shapiro 2010).

As noted, in antitrust the definition of the relevant market is traditionally done to determine the competitive constraints of firms and this is preliminary to determine whether there is market power. By contrast, market definition in subsidy and State aid cases should not focus on the competitive constraints that make price increases unprofitable but should concentrate on 'how other existing producers are affected and on the potential effects on producers in markets that the aid recipient intends to enter' (Nitsche and Heidhues 2006, p. 122). Within this context, the focus of the benefit question is simply to determine whether, as a consequence of the measure, the company or sector at issue has received an advantage that can then harm other producers (harm whose existence will be assessed later, under the various standards provided by subsidy disciplines).

In other words, there is really no need to consider supply-side considerations and dynamics, at the very least in the benefit determination (Cosbey and Mavroidis 2014). What is the problem with the consideration of the supply-side angle too? The reference to supply-side implies that a *narrower* definition of the market may eventually emerge. This may crucially mean that the conclusion, that the financial contribution has conferred a benefit, becomes *less* likely.

In this regard, it is interesting to note how market definition can produce different, indeed opposite results, depending on the context where the exercise is performed.

As noted, in the context of the determination of the benefit, the narrower the market (i.e., the more specific the reference group and the benchmark, and the more tailored to the characteristics of the alleged recipients), the less likely we are to conclude that there is an advantage. By contrast, in the context of antitrust injury (and, we can assume, the same can be affirmed for serious prejudice and injury subsidy claims), the narrower the market, the more likely the company can be found to have market power and hence harm competitors. We have different risks to watch out for in the two scenarios: under-inclusion in the former, over-inclusion in the latter.

Whether either risk is acceptable depends on the assessment a given system makes of the consequences of the relevant determinations in terms of rule

application (or lack of it). To a large extent, the performance of the market definition analysis in the context of the benefit is more sensitive. While a positive determination (e.g., because the benefit has been established only on the basis of demand factors) is not usually the end of the story (the classification of a measure as a subsidy is only the first step of the analysis),[24] a no-benefit determination would immediately put the measure beyond the scrutiny of subsidy laws, with significant repercussions for transparency and subsidy governance. In a word, if no benefit is found to exist, there is no subsidy to notify. This means that other Members would have less opportunity to scrutinize the measure.

In conclusion, by introducing supply-side analysis at the stage of the benefit determination, the Appellate Body has incurred into two fundamental methodological errors, one economic and one legal. The too quick and easy importation of an economic tool that is normally used in other contexts is the result of a misconstruction of both: (i) the goal of market definition and of (ii) the goal of the benefit analysis (within the subsidy determination).

These misconceptions paved the way to the narrowing of the market in the case at hand and, through this, to the second innovation of the Appellate Body, i.e., the idea that we can think of scenarios where governments artificially create markets and crucially shelter them from subsidy scrutiny. Whether these two steps were warranted or not is the subject of the next two sections.

3.1.6 Third Economic Misconception: The Use of Supply-Side and the Narrow Definition of the Market

Assuming now that the definition of the relevant product market at the level of the definition of subsidy is warranted, has the Appellate Body done it correctly?

The world trade court noted that energy markets need to be looked at from both the demand side and the supply side. While the former, substantially based on what consumers do, would have pointed to one single energy market (irrespective of the source of generation),[25] the Appellate Body engaged in supply-side analysis to

[24] In other words, WTO subsidy disciplines do not object to subsidies per se, unless negative effects on cross-border trade can be established. Crucially, however, the determination that Ontario's FIT was a subsidy *would* have been 'game over' in the *Canada-Renewable/FIT* cases. Pursuant to Art. 3 of the SCM Agreement, the inclusion of a local-content requirement in Ontario's FIT Programme would have at once led to its simple prohibition.

[25] From the case file it was clear that the 'electricity is electricity' statement was true, and was not qualified by consumer preferences or indeed the practical possibility of empowering consumers with a choice on which electricity to be supplied with depending on its source. The statement that, since, in the case, electricity was not bought directly by consumers but by the government in the wholesale market, 'government's purchase decisions' which require a 'certain supply-mix' make electricity from different sources not substitutable is another example of unwarranted consideration of policy considerations (see Appellate Body report, paras. 5.176–5.177). If this finding were generalized, it would invariably lead to tailoring market definition outcomes to governments' policy choices.

eventually narrow the market down to renewable energy (and in particular wind and solar) only. The factors that led the Appellate Body to conclude the existence of a separate market were: (i) the extremely high upfront costs of renewable energy generating capacity—partially offset by low operating costs—and (ii) the intermittency of renewable energy production, both of which contribute to the inability of wind and solar PV producers to compete unaided with conventional electricity producers. Assuming supply-side considerations are relevant when defining relevant markets, the factors relied on by the Appellate Body are not, per se, without further explanation, relevant to show substitutability or lack thereof (Breckenridge 2013). In particular, the costs *of production* of renewable energy do not necessarily show the cost *of shifting* production. That is what matters in supply-side analysis. This is economically ill informed. It is a precedent that will come back to haunt us outside the realm of clean energy (Cosbey and Rubini 2013). It is another example of confusion and conflation of the different issues of subsidy existence and subsidy justification. In sum, it looks like '[t]he cost structure of production, and other uncompetitive supply-side characteristics of the new good, *which are the underlying drivers of the need for* subsidy' (Cosbey and Mavroidis 2014),[26] becomes the key technical device, in the Appellate Body's reasoning, to deny the existence of the subsidy altogether.

This is the third economic misconception, the one that, by determining that the market is particularly narrow, prepares for the next finding of the Appellate Body that expressly protects certain FITs from subsidy scrutiny. Arguably, the key step of the reasoning is not just the narrowing of the definition of the market, but shrinking it so that the reference group is essentially adjusted and tailored to the specific circumstances of the recipients of the measure. As a result, the conditions of the actual measures under investigation become close to the benchmarks available in *that* reference group, so close that it becomes difficult to conclude that the scheme at issue is an exception or deviation from the norm. Indeed, in this modus operandi, the scheme *becomes* the norm.

3.1.7 If Courts Play God: The Judicial Creation of Markets

The second innovation of the Appellate Body's benefit analysis is the introduction of the concept of government-created markets. In particular:

> a distinction should be drawn between ... government interventions that create markets that would otherwise not exist and ... other types of government interventions in support of certain players in markets that already exist, or to correct market distortions therein. ... While the creation of markets ... does not *in and of itself* give rise to subsidies within the meaning of the SCM Agreement, government interventions in existing markets may amount to subsidies (Appellate Body, para. 5.188).

[26] The emphasis is added.

This is the most important statement of the report, the culmination of its reasoning fully prepared by first requiring the definition of the relevant market and then, by misusing supply-side analysis, narrowing it down to renewable energy only. It is the watershed that lays down the new line on what can be done without triggering the application of subsidy rules. The Appellate Body is in effect creating a shelter for some significant measures of public support to clean energy, although its boundaries are not fully clear yet.

The language of this carve-out is broad, vague and open-ended. It is more conceptual than prescriptive, which is a danger in legal reasoning. Judgments need to clarify the law that has to be applied, and not conceptualize it and, through this, make it *less* clear. This language does not provide clear indications on how to practically determine what is covered and what is not covered, when we have a benefit and when we do not have it. The side effects of this sweeping language will be felt in the future. This vagueness opens the door for dangerous analogic reasoning in cases to come, and not necessarily in the clean energy sector only.

Has the Appellate Body managed to descend this conceptual level to provide more operative indications? By looking at other parts of the ruling, it looks like it wanted to indicate that the 'creation of the market' scenario does include energy supply-mix decisions.[27] Now, crucially, the definition of the supply-mix would cover the regulation of the quantity and type of electricity supplied through the network and the timing of supply, in order to ensure constant and reliable supply (para. 5.185), or more generally the parameters of the system (para. 5.189), but may also include price-setting, such as FITs (whose remuneration encompasses cost recovery and a reasonable margin) and quantity mandates (para. 5.175). Once the market has been created, benefit benchmarks should be found in the resulting 'competitive' markets (paras. 5.190–5.219). In this respect, the attribution of more than adequate remuneration would appear to go beyond the 'market creation' scenario and constitute an intervention in an already existing competitive market (para. 5.228). The Appellate Body then attempted to complete the analysis on the basis of the factual evidence on file and seemed to indicate that, at least for wind, appropriate benchmarks could have been represented by RES initiatives where the remuneration was fixed through competitive bidding (paras. 5.240–5.244). Eventually, it did not make any finding due to the 'complexity of the issues' and 'absence of full exploration' (sic) before the Panel.[28]

If one wants to make the notion of 'creation of the market' operational, a lot of questions about the precise boundaries of this safe-harbour are left unanswered in the report. For example, the Appellate Body is suggesting that the dividing line for FITs is whether the remuneration is adequate. But the key legal issue is that the criteria to determine this adequate level are still vague. What costs are we talking

[27] In particular, a common statement is that the definition of the energy supply mix does not *in and of itself* constitute a subsidy (Appellate Body, paras. 5.175, 5.190, 5.227).

[28] One is left to wonder whether, after two levels of adjudication, and after a great wealth of economic evidence and arguments put forward by the parties, this could really be so difficult.

about? Any level? In particular, is the Appellate Body providing shelter for the compensation of *all* costs of renewable energy production? If so, is this footing of the bill correct? Or rather, should the safe-harbour be given only to the extra or additional costs for producing clean energy? If this distinction is in principle sound, can it be made operational? What is the reasonable profit the Appellate Body is referring to? What does adequate remuneration mean? Further, is the fact that remuneration is set through 'competitive bidding' really sufficient, when the said competitive bidding process 'sets prices for delivered electricity at the levels of the lowest bids *meeting specified conditions*'? (Panel, para. 7.29)[29] What do these conditions pertain to? Can policy considerations go into them, and thus alter the commercial nature of the auction? In sum, how economically reliable are the signals coming out of this bidding process?

What the Appellate Body is doing is not simply acknowledging that governments may create markets, but it is, more radically, making the most significant act of judicial creation. This carve-out is legally and economically wrong. It is fundamentally confusing the existence with the justification of the subsidy. From another perspective, the idea that governments sometimes create markets does make some economic sense, especially when it is used loosely to refer to governments stepping in the market and providing public goods that the market would under-supply. Economists are left at a loss when you point out to them that the Appellate Body hastened to add that this 'market creation' scenario should be contrasted with that of government interventions in already existing markets. This distinction is difficult to capture, and not by chance. It is always about market failure scenarios that may justify public action. It is in fact purely a legal fiction, functional to creating a carve-out and offering governments flexibility of action. This could be the right moment to underline a paradox coming out from the Appellate Body's finding. The 'market creation vs market intervention' dichotomy seems to mean that, if you are creating a market from scratch, there is no benefit and hence no subsidy. If you are providing some support in an already existing market, there can be benefit and hence subsidy. In other words, the bigger the market failure (and hence the intervention and its possible distortions) the less likely you are to be caught. Can this be right?[30]

In sum, not only is the Appellate Body's carve-out characterized by unclear boundaries and dangerously open-ended, it is fundamentally wrong.[31]

[29] The emphasis is added.

[30] One immediately wonders whether this test could apply to other scenarios, and in particular to which ones. What about the large civil aircraft ('LCA') sector which caused the biggest transatlantic 'Boeing-Airbus' trade row. This is a sector where arguably you would not see a single aircraft in airports' runaways without massive public support right at the beginning of the production process. Could the 'market creation' apply? If so, WTO dispute settlement would have spared huge resources that have strained the system. But, this begs another question: would Members be happy about having the LCAs industry sheltered from subsidy control altogether?

[31] The significance of this exception can be properly appreciated if the Appellate Body's approach is contrasted with that of the dissenting panellist. Its spirit, by calling a subsidy a subsidy, without for this reason demoting the legitimate public policy reasons justifying it, is more attuned to

3.1.8 Conclusions: From Genesis to Nemesis

The previous review of the main steps of the reasoning of the Panel and the Appellate Body show legal and economic faults so serious to constitute the nemesis of legal methodology. The path to reconcile law and policy and distinguish the 'bad' from the 'good' has produced the 'ugly' in terms of legal analysis.

In this respect, we do not see any major difference between the Panel (majority) and the Appellate Body. We really have 'more of the same', with the appeal court perhaps using a more sophisticated approach, attempting to distance itself from the overtly policy-oriented language of the Panel, to rely on more objective and economic-based criteria. In the end, however, it is mainly fine-tuning and ultimately a cosmetic exercise. The approach and the result are essentially the same. Our argument does not therefore distinguish between the two. The same criticism is equally applicable to both.

In a nutshell, the ultimate methodological misunderstanding, which underlies all legal and economic errors just reviewed, is the *conflation of the question of the existence of a benefit, and hence a subsidy, and the question of the justification of the subsidy*. More specifically, the problem is the anticipation, and the acquisition, of justification considerations at the level of the arguably preliminary level of the definition of subsidy.[32]

Why is it important to keep existence and justification of subsidy separate?

Subsidy laws and control are increasingly subject to criticism. The argument is that, at best, they do not make a good job in distinguishing good from bad governmental intervention and, at worst, they may even deter further commitments of liberalization (Sykes 2010). Assuming now that subsidy laws do make sense (this article perspective is that of the judge-interpreter, not of the legislator), it may be accepted that it is important that subsidy laws, and each element of the system of subsidy control, are interpreted in the light of what seems their practical goal. In a word—the approach must be purposive and systemic at the same time. Objectives matter, the design of the system of control and accordingly the regulatory framework matter too.

The conclusion that certain out-of-the market measures are safe under subsidy laws is certainly the main result of the *Canada-Renewable Energy/FIT* ruling but there are other important implications of the decision.

First, even assuming the correctness of the Appellate Body's approach, there is no clarity with respect to the precise boundaries of the carve-out. Moreover, the Appellate Body does not provide strict conditions or procedural guarantees to ensure that this flexibility is not abused. In other words, if we want to allow a certain degree of compensation of costs of certain legitimate activities, we need to

economic sensibility and at the same time more consonant with the purpose and structure of WTO subsidy laws.

[32] The ultimate root cause of this problem lies in the fact that we do not have a clear rule telling us what is a good subsidy (but still a subsidy) and what is a bad subsidy (but still a subsidy).

know which costs are covered and how they are calculated. To avoid undue distortions, we also need to keep compensation at the minimum level necessary to achieve the goal.[33]

Second, as repeatedly noted, the creation of a carve-out from subsidy laws has important systemic consequences for transparency and the monitoring of subsidies.

The central idea of subsidy control is to subject certain measures that may distort international trade to supranational scrutiny. The definition of subsidy is crucial in this regard. It is the legal and operational device used to determine whether certain measures may raise concerns and, if so, subject them to control. The net thus catches those measures, coming within certain categories of public action, which have the potential to alter the level playing field by conferring specific benefits. This initial selection may be imprecise, and may be under-inclusive or over-inclusive. But the question is only whether a potentially troublesome measure should be subject to the disciplines, not whether it should be ultimately objected to or permitted (which depends on the content of the said disciplines).

In the logic of current subsidy laws, this initial selection is, however, of crucial importance for transparency. If the subsidy is also specific (i.e., it is not broadly available across all industries of the economy) or if, in any case, 'operates directly or indirectly to increase exports or reduce imports', it will be subject to the first GATT commandment on subsidies, the obligation of notification.[34] The implications of the carve-out created judicially by the Appellate Body on transparency are clear. If there is no subsidy in the first place, there is, legally, no duty to notify the measure to the WTO and hence the opportunities for monitoring and peer-control diminish dramatically.

This leads to our final comment. The possible impact of the Appellate Body's approach can be fully appreciated only if the generality of its innovations—the need to consider supply-side factors, and the broad concept of market creation—are considered. Nothing precludes these broad findings, which raise the bar for establishing the existence of a subsidy, from applying more generally to other subsidy cases, even beyond the energy sector. The possible magnification of the concerns of abuse, undue distortions and lack of transparency is clear.

[33] This means to impose conditions of transparency, proportionality, and also the use of bidding procedures. This is the route followed in the EU with respect to the financing of the costs of public service obligations in the landmark *Altmark* decision. If the four conditions laid down by the ECJ are satisfied, there is no advantage and no state aid.

[34] See GATT Art. XVI:1. It is crucial to highlight that to trigger the application of transparency obligations, no precise analysis of the effects of the measure is necessary, and not by chance. The transparency threshold operates for all subsidies that may, even potentially, produce undesired effects, and not only for those that will actually (or presumptively) do so. The real or presumed trade impact of the measure becomes relevant only when it comes to decide whether the subsidy is permitted or prohibited, which is a separate issue from the commitment of being open about one's subsidies. This can be understood if the purpose of transparency—facilitation of peer-control—is considered. Through transparency the system casts its light on potentially troublesome subsidies, through transparency it should eventually enable the discussion and assessment of their effects.

It is difficult to think that these considerations eluded the WTO adjudicating bodies. Is it really possible that neither the Panel nor the Appellate Body were aware of what they were doing, and of the possible future consequences of an incorrect legal and economic analysis? In the next two sections we advance two possible answers.

3.2 First Doubt: A Pantomime?

The reader may recall the policy narrative prevailing in the case: LCRs are 'bad' policy; FITs are 'good' policy. By now it should also be clear that the legal reasoning and the outcome of the case fully reflect this dichotomy. While there was no hesitation in striking down the LCR element of the Ontario FIT Programme, the Panel and especially the Appellate Body were at pains to make sure that the FIT be made safe under subsidy laws. What eventually emerged is a judicially created shelter for certain types of out-of-market green energy incentives.

3.2.1 Play Your Part

In a dramatic piece, everyone has a part to play. It is through this lens that we now look at the stance of the main players in the litigation.

Statements in the litigation. First, there are significant traces in the reports showing that everybody was fully conscious of the huge policy significance of the case, and took every opportunity, especially in the nodal points of the process, to ensure that this be made fully manifest. The complainants—Japan and the EU—set and sustained the pitch of the 'black-and-white' policy narrative. Quoting one of the very first paragraphs in the Panel's report, immediately after the brief summary of the measures at issue and of the claims, we find:

> *Throughout these proceedings* [. . .] the complainants have *emphasized* that in contesting the WTO-consistency of the challenged measures, they do not question the legitimacy of the objectives pursued by the Government of Ontario through the FIT Programme of reducing carbon emissions and promoting the generation of electricity from renewable energy sources. Japan has explained that 'Japan does not take issue with Ontario's stated goal of enhancing renewable energy generation' or 'the government's intervention as such to internalize the positive externalities of renewable energy generation technologies'. Likewise, the European Union does not 'contest the general purpose of the FIT Program, as helping to promote electricity supply from renewable energy sources', highlighting that '[s]uch a purpose is legitimately valid and . . . WTO Members can and should actively support it' (Panel, para. 7.7).[35]

Having clarified what the complainants considered legitimate, the paragraph goes on to explain what worried them:

[35] Footnotes in the original text omitted, emphasis added.

> What the complainants call into question is *limited* to the alleged trade-distortive element of the challenged measures, which they identify to be the 'Minimum Required Domestic Content Level' given effect through the FIT Programme and the FIT and microFIT Contracts. According to the complainants, this aspect of the challenged measures affords a form of WTO-inconsistent protection to producers of certain types of equipment used to generate electricity from solar and wind energy ... that are based in Ontario to the detriment of competing industries in other WTO Members, and should therefore be eliminated. Thus, as Japan has declared, these dispute cannot be properly characterized as 'trade and environment' disputes, but rather, they should be thought of as 'trade and investment' disputes (Panel, para. 7.7).[36]

The insertion of this paragraph at the very beginning of the reports is self-explanatory of the Panel's awareness of the important policy dimension of the case. Confirmation of the Panel's awareness that it was stepping on sensitive ground comes out when it was about to reach the conclusion that the measures at issue contravened WTO laws. At paragraph 7.153 of the reports, the Panel seems to almost shy away from the just found rejection of Canada's defence that the FIT Programme, constituting public procurement, be excepted from the prohibition of non-discrimination. We read:

> In coming to this conclusion [that Canada cannot rely on the public procurement exception], we express no opinion about the legitimacy of the Government of Ontario's objective of promoting the use of renewable energy in the production of electricity through the FIT Programme. Our conclusion that the Government of Ontario purchases electricity under the FIT Programme 'with a view to commercial resale', within the meaning of Article III:8(a), must be understood only as a judgment about the extent to which Canada is entitled to rely upon Article III:8(a) of the GATT 1993 to maintain a measure that is alleged to discriminate against imported products under the terms of Article III:4 (Panel, para. 7.153).[37]

Anticipating the inevitable—the finding that, once subject to the normal rules, the measures did grossly discriminate domestic and imported products—the Panel is anxious to reaffirm it is not questioning the legitimacy of the green objectives underlying the measures.

This paragraph simply states what in legal terms is obvious but, in doing so, it clearly shows the relentless policy dimension of the case.

Litigation strategy. It is also interesting to note the litigation strategy of the complainants, and the reaction of Panel and Appellate Body to it.

As is usually the case, a complainant puts forwards various lines of argument when attacking a measure, with the easier and more convincing one first. The first step of any subsidy claim is to show that the measure does fall within one of the categories of governmental action of Article 1 of the SCM Agreement. There are two main types of action under this provision, first those falling within the straits of one of the fairly detailed forms of financial contribution, and secondly those captured by the fairly open-ended and surprisingly unexplored language of 'any form of income or price support'. It should be noted that both call for what is largely

[36] Emphasis added.

[37] Emphasis added.

a formalistic exercise. There is clearly no need to consider the objectives and impact of the measures at this stage.[38] Bluntly, it is essentially a matter of pigeonholing.

Now, Japan and the EU put forward arguments in both respects. But, as we hinted at, if a good lawyer always tries various routes in the alternative, she or he usually begins with the stronger one. In this case, it is clear to us that to prove that the Ontario FIT Programme was a form of 'price support' was definitely less intellectually consuming, and required less energy, than to follow one of the financial contribution alternatives. Two quick facts confirm this. First, the complexity of the arguments and analysis of the financial contribution which clearly comes out from the reports; secondly, the good guidance on the concept of 'price support' given by the Panel in the *China-GOES* case just a few months before the *Canada-Renewable Energy/FIT* case.[39] But this is not what happened. Having found that the programme constituted a financial contribution in the form of a 'purchase of goods', the Panel exercised judicial economy on the 'price support' claim. The Appellate Body confirmed.

What is the point we are trying to make? The fact that the complainants followed first the difficult and then the easy routes, while the adjudicating body only pronounced on the former—with all the actors engaging in a complex analysis (and, yes, eventually a positive finding that that measure was a form of financial contribution) is, in our view, another indication of the *reluctance* to call the Ontario FIT programme a subsidy. In other words, why have both the parties and the adjudicating bodies followed such an inefficient and paradoxical approach? If something like judicial economy does exist, it should be taken seriously. This would have meant immediately addressing the 'price support' argument and quickly (i.e., with few steps of reasoning and few paragraphs of narrative—brevity is a virtue) solve the point. What—again in the name of judicial economy—should have been spared was the intricate question and analysis of whether the complex Ontario's regulatory framework fitted one of the specific forms of financial contribution. But, alas, legal clarity and efficiency may not always be welcome. Mudding the waters is a good way to detract the attention and soften the pill. And, in doing so, you may also avoid touching sensitive ground. The crux of the issue is that the potential of 'any form of income or price support' is known. This could represent an easy gateway to cover FITs and *other regulatory measures* of support in the green sector and beyond—a result to steer away from.[40]

[38] This can be contrasted with the analysis called for by the benefit language that may, at least on its face, call for a more substantive assessment where aims and effects of the measure are both considered.

[39] Guidance which could not pass unnoticed since this was the 'official' interpretation of the term 'price support' in the WTO era, and the first since an old 1960 GATT Panel report.

[40] Even more telling is the fact that there was no discussion of whether 'energy', and in particular 'electricity', is a 'good' or a 'service'. The Panel did simply take note that the parties seem to agree it was a good. The issue did not come out before the Appellate Body. In fact, the classification of energy as either a good or a service is highly significant. Had energy been considered as a service,

Reactions to the report. Also the reactions of the parties after the Panel and Appellate Body rulings follow the binary pattern of the policy narrative espoused at length so far. With identical (verbatim) language the EU welcomed both rulings noting that: 'The EU supports the promotion of renewable energy but considers this must be done in a manner consistent with international trade rules' (European Commission 2012, 2013). In the aftermath of the Appellate Body decision, John Clancy, the EU Trade spokesperson highlighted: 'Today's ruling is good news for everyone caring about clean energy and the environment: it has been made clear that use of quality, cost-effective technologies should not be hampered by protectionist measures' (European Commission 2013). In similar language, in Japan, Mr Motegi, Minister of Economy, Trade, and Industry noted that 'The [Appellate Body's] Report supported the main claims of Japan and ruled that the local content requirements under the Feed-in Tariff Program in Ontario are inconsistent with the related WTO Agreements. This is the first case that a measure providing preferential treatment to domestically manufactured goods under the Feed-in Tariff Program is WTO-inconsistent. Japan considers this ruling can be highly evaluated from the viewpoint of preventing protectionism in renewable energy sector, which can be regarded as a major growth industry.' (Motegi 2013)

In sum, the acceptance of this policy narrative did shape litigation strategy and discourse, and also informed the actual legal analysis. The presence of pressing policy concerns—the need to reach a delicate legal settlement where 'bad' green support is distinguished from the 'good' one—played a role in the parties' and especially the adjudicators' attitude. On the one hand, the Ontario FIT Programme was found to fall within one of the eligible forms of public action in the subsidy definition but only using the hard way. On the other hand, the special policy goals of the FIT were accommodated through the legal requirement whose interpretation could more easily open up to policy considerations, that is the notion of 'benefit' in the definition of subsidy.[41]

For these reasons, more than 'trade and environment' (as some green NGOs depicted it) or 'trade and investment' (as Japan characterized it), the dispute can be better characterized by the *dialectics between law and policy*, by the tension between an extremely policy-charged narrative and the often uncertain and hence pliable legal language.

---

the WTO subsidy disciplines would simply not have applied (the SCM Agreement only applies to subsidies to goods). The TRIMs and GATT Art. III claim would equally have been put aside. National treatment considerations would have still been relevant but the analysis would have focused on the GATS and the commitments taken by Canada in its schedule for the relevant sectors.

[41] It is in this light that the decision to exercise judicial economy and not to rule on whether Ontario FIT programme was a form of price support can also be viewed. Although this element is perhaps less prone to be subject to policy considerations, a positive finding could have had far-reaching consequences. What we could call a *political* exercise of judicial economy. See 'Ruling Not to Rule – The Use of Judicial Economy by WTO Panels' (Busch and Pelc 2011, p. 263).

3.2.2 Unexpected Principal Actors

In a principal-agent framework, it could be argued that the Panel and the Appellate Body indulged in gap-filling when construing the benefit, and they did so in the belief that this best corresponded to the principals' will.

In their recent mapping of the politics of treaty interpretation, Pauwleyn and Elsig suggest that in the presence of 'salient' decisions (i.e., decisions where 'principals and the broader community care about the outcomes of courts'); courts would tend to be less autonomous and creative in their interpretation (Pauwelyn and Elsig 2013). Moreover, courts would tend to be more activist as the 'divergence of interests among the principals' increases. If these insights are correct, this case may well represent a variation, if not an exception, to the rule. The decision to be taken in the *Canada-Renewable Energy/FIT* cases was certainly 'salient' but the relative 'autonomy' or indeed 'activism' shown by the Panel and the Appellate Body in their construction of the benefit cannot be explained in terms of 'divergence of interests among the principals'. It may be counterintuitive but it is argued that the undercurrent of these disputes is a substantial agreement with respect to the key rules of the game in what is increasingly a key economic sector: LCRs are bad, FITs are good. Both the Panel and Appellate Body acted knowing this, and anticipated that their findings, by closely reflecting this agreement, would have been accepted.

3.2.3 The Pantomime

We have a strong suspicion (an intriguing hypothesis) that, against this clearly entrenched policy narrative, the litigation on Ontario FIT Programme could itself be considered to be a huge pantomime where each actor played its character-role.[42] To be sure, the strategic element inherent in litigation makes it often akin to a play. But the point made here is different. It is not that parties to a dispute do and say certain things following a certain, often predictable, pattern. Our argument is rather that, in this case, the parties (and especially the complainants) put forward certain arguments, well knowing, however, that the political meaning of a positive response to their arguments would have actually led the Panel and the Appellate Body to reject them. In a word, they were *expecting* that, despite every possible argument, the adjudicating bodies would have *rejected* their subsidy claim.[43] Likewise, they were *expecting* that their discrimination claim would have *succeeded*.

[42] For a similar, thoughtful and intriguing characterization of EU state aid control, see 'From Trade to Tutelage: State Aid and Public Choice in the European Union' (Bishop 2005).

[43] The reasons that led to filing the complaints (e.g., intensive lobbying by the relevant special interests) do not, in our view, lessen this reading. Once the complaint is launched, you do behave in a certain way, you play by the rules of the game. In this case, one strategic element is the anticipation of the adjudicator's behaviour (which may in turn be significantly affected by the expected reactions of the Membership to certain findings).

This is a reasonable doubt, supported by the outcome of the case, and in particular the process that led to it, and also by Japan's and the EU's statements during the proceedings and their reaction to the release of the reports.

What everybody loathed, the local-content requirement was surgically extracted and eliminated. The less intrusive technique to do this was the easy path of a non-discrimination finding (duly reinforced by a narrow interpretation of the public procurement defence). The Panel and the Appellate Body had no major difficulty in doing this and thus responded to the general 'no protectionism' expectations. By contrast, to pursue the path of the subsidy claim would have greatly intruded into Members' sovereignty.

First, if the Ontario FIT Programme could be found to constitute a subsidy, the conclusion that the latter also constituted a prohibited subsidy under Article 3.1 (a) of the SCM Agreement would have been foregone, thus requesting Canada to withdraw the subsidy 'without delay' (a rapidity of compliance which is not required for a finding of a breach of national treatment only, for which a 'reasonable period of time' needs to elapse). Even more crucially, it is still unsettled whether, in such a case, the measure to withdraw should simply have been the LCR or should have extended to the FIT element too, an additional reason which could justify a policy and judicial preference for *not* following the subsidy route. Second, by implicating a positive finding of subsidy existence, the dispute settlement organs would have laid down a symbolically dangerous precedent, especially when other disputes on green energy subsidies are pending and others may follow suit soon (*EU - Renewable Energy; EU - Biodiesel; India - Solar*). We have highlighted already that WTO subsidy disciplines do not object to subsidies per se. What are apprehended are subsidies that cause negative effects on trade. This would mean that, absent prohibited export- or local-content- conditionality, subsidies supporting energy generation would be objected to only if an adverse impact on trade could be shown. This is clearly a matter of evidence, one that, however difficult, could be positively established in other cases, in presence of the right factual circumstances. If, however, the policy goal is to protect and shelter these subsidies, the best way to do this is to outline certain legal conditions that would exclude the existence of a subsidy in the first place. Consequently, both the Panel and Appellate Body successfully managed not to call a subsidy, what is in fact (almost by definition), a subsidy.[44]

In other words, in *Canada-Renewable Energy/FIT* the subsidy part of the case raised a judicial conundrum. Unlike in the national treatment claim, it was impossible to clinically separate the bad policy from the good one. Within the eyes of subsidy regulation, the two largely shared a similar fate. For the Panel and the Appellate Body (and the parties to the dispute), the immediate concern was not system coherency or transparency (which by definition is not relevant when the

[44] As further elaboration of this implication, both the Panel and the Appellate Body may have considered that their interpretation of the benefit could have played a beneficial role for the cause of green energy support in the future, also in the knowledge of the chances to amend WTO subsidy rules to expressly recognize that these subsidies are legitimate and should not be actionable are very dim.

measure is litigated), and, this is our impression, not even that methodology had to be subjugated to reach the desired outcome, but whether the prohibition of a blatant discriminatory condition would have been fatal to the preferential tariff and subsidy as well. This had to be avoided, irrespective of the costs. The possibility of solving the case via a fairly straightforward, and limited, finding of discrimination was the easy, and eventually preferable by everybody, way out. But, at the same time, the subsidy claim was also to be disposed of.[45]

As epilogue to this pantomime, during the Dispute Settlement Body meeting where the adoption of the two reports was on the agenda, the US, the big third party, uttered the final word on the case (as putative world trade leaders are expected to do). While essentially endorsing the outcome of the case, and the legal analysis on the national treatment claim (as well as the narrow construction of the public procurement exception), they made caustic remarks on the legal route the Appellate Body followed in the subsidy benefit analysis. What meaning should we give to this statement? If the deeply entrenched policy narrative (only the LCR has to be bashed, no positive subsidy determination is welcome) had to prevail, could the Appellate Body really be chastised? Could they really do much differently?

3.3 Second Doubt: A Good Decision After All?

A different reading of the case, and essentially a positive one, is possible.

Faced with a difficult issue, with open language, and with important policy implications, the Panel and the Appellate Body did a good job. The Appellate Body polished the initial rough approach of the Panel. The resulting test is still general—quite probably intentionally—but the carve-out manages to capture the essence of the problem. Some good incentives that are not intended to create undue competitive benefits, in a word to distort, but to correct existing market failures are allowed. The outer limit is correctly found in the adequacy/excessiveness of the remuneration. If the analysis and especially the test are still general, further guidelines and fine-tuning will come in the future. The contours of the carve-out will be refined, any wrinkles ironed out. This generality may perhaps be intended also as a signal sent by the judicature to the Members and a symbolic invitation to act and provide the details.[46] The conclusion that certain measures do not constitute subsidies may be just seen as a legitimate clarification of the notoriously ambiguous contours of what does and does not amount to a subsidy. (And the notion of 'benefit'

[45] If our reconstruction of the case is correct, one big, pending question is *why* Japan and then the EU decided to pursue a subsidy claim in the first place, and did not limit themselves to neatly and easily arguing that the measure was discriminatory.

[46] Interestingly also some of the people that argue that the Appellate Body has done a good job in the *Canada-Renewable Energy/FIT* case, concede that a litigation-driven clarification is not ideal and may not be enough.

is a good example.) In the end, courts, at both the domestic and international levels, are there to clarify the law.

3.4 Everybody Does It!

Courts are often faced with difficult issues, open language, and pressing policy considerations. In these circumstances, the temptation to make a 'Grand Style' case may be difficult to resist.[47]

Subsidy decisions invariably produce good examples because of the intricate mix of policy and economic interests, the vagueness, and often idiosyncrasies of the law. Take some of the recent high-profile cases of the Court of Justice of the European Union ('CJEU') on the definition of State aid. The CJEU passed important judgments in the *EDF* and *Gibraltar* cases,[48] where the question was whether the measures at issue were apt to confer a selective economic advantage, a question remarkably similar to the one under scrutiny in the *Canada-Renewable Energy/FIT* cases.

In *EDF*, the Court was called to decide whether the European Commission was right in concluding that France, by waiving a corporation tax claim of almost EUR 900 million owed by, at the time, State-owned energy company EDF, granted unlawful State aid. To France this was an investment decision that any private investor would have taken. On first instance, the General Court quashed the Commission's decision because it was unduly formalistic by refusing to apply the Market Economy Investor Test ('MEIP') and assess whether a private investor would have acted in the same way as the French State had done.[49] The Court arguably surprised everybody and upheld the General Court approach.

[47] In 1960 Llewllyn published *The Common Law Tradition*. With maybe an audacious parallel, the spirit of this assessment looks similar to those of 'Grand Style' cases. In Llewllyn's jargon, referring to a common-law context, Grand Style cases are those where policy considerations come in for explicit examination. It is the style that produces a more effective and just outcome, and one more adapted to the social needs of the period. Grand style is concerned with providing guidance for the future. The judge enjoys what is called 'situation sense', i.e., the 'true understanding of the facts and right evaluation of them'. As a result, the decision that emerges is a good one inasmuch as it is 'something which can be hoped, or thought, to look reasonable to any thinking man'. Now, if we were to apply this definition, the *Canada-Renewable Energy/FIT* should certainly be considered a 'Grand Style' case. It should, however, be seriously asked whether this decision can be considered 'good' only because it looks 'reasonable to any thinking man'. Surely, legal methodology requires more than reasonableness.

[48] For a commentary on these cases see, 'State Aid is Falling Down, Falling Down: An Analysis of the Case Law on the Notion of Aid' (Biondi 2013, p. 1719).

[49] Interestingly, the EFTA Surveillance Authority supported the Commission's position—you cannot judge the exercise of tax powers on the basis of what private investors would do—which shows the expectations of law enforcers.

In *Gibraltar*, the arduous task was analysing an overall corporate tax system under State aid law for the first time. The issue was whether a tax regime applicable to all companies set up in Gibraltar, and which essentially used payroll and property occupation rather than profits as tax base, did constitute State aid. The prevailing test to determine whether a tax confers a State aid is whether the tax measure at issue derogates from the otherwise applicable general tax baseline. The European Commission indicated that it would follow this 'derogation test' in its practice, by expressly endorsing it in its 1998 Guidelines on Direct Taxation and State Aid (European Commission 1998). That did not happen, however, in the investigation of the Gibraltar tax system. According to the Commission, albeit arguably general and applicable to all companies established in the British dependency, this corporate tax system was inherently and intentionally selective. A strict (or perhaps just *formal*) application of the derogation test would have led to conclude that there was no aid, and this would have been unacceptable. In the judicial review of the Commission's decision the General Court chastised the Commission. The decision was invalid since the Commission did not follow its analytical framework of analysis. This was also the view of the Advocate General, in the appeal to the Court of Justice. The Court, however, sided with the Commission noting that State aid should be defined by reference to its effects and, crucially, independently of the regulatory techniques used.

Arguably the CJEU got the methodology completely wrong in both cases. On the one hand, it did apply the MEIP test, which is normally applied to the conduct of public bodies in the market, to what is the exercise of the public privilege to tax (and correspondingly to renounce tax claims) and not an economic activity. Had the correct methodology been applied, the Court would have arguably reached a different, indeed opposite conclusion. The French action was clearly a State aid—and a particularly obvious one. On the other hand, in the *Gibraltar* case it should have followed the hard way to establish that the corporate tax system was State aid. It should have applied the derogation test clearly and to the full.[50] A proper application of the derogation test would have arguably led to the same result but—this is the crucial point—without violating the important requirements of a sound legal analysis.

The true importance of the matter is not whether the outcome of the case is wrong or right. What matters is that courts *always* create precedents, for the simple fact that they have to provide a statement of the reasons leading to their rulings. In this sense, courts always decide for the future. This shows why and how legal analysis and its methodology are important. The role of the judge is to provide the correct methodology, which is the legal standard by which future disputes will be adjudicated (Mavroidis 2013).

[50] This might perhaps have led to a challenge to Member States' sovereignty more directly, by questioning whether the bases of assessment of the Gibraltar tax system duly reflected the 'ability to pay' principle, which is commonly considered as the underlying rationale for direct taxation.

How did the CJEU get it so wrong? At the most superficial level, one might say that these cases show the current trend of State aid jurisprudence, away from a formalistic approach, towards a more substantive or more effect-based one. Another explanation may be more institutional. The current system whereby key decisions go to the Grand Chamber (of up to fifteen judges) is not tenable. In the absence of minority and dissenting opinions, the price of compromise—i.e., bad and contradictory reasoning—is too high.[51]

Another possible explanation focuses on the policy pressure in these high-profile cases. This comes out particularly clear as the *Gibraltar* corporate tax systems had a long history of being perceived as unfair. What was missing was a finding under State aid law. The policy forces surrounding the *EDF* decision are more difficult to disentangle. On the one hand, considering the sheer amount of the measure (almost EUR 1 billion), the particularly blunt course of action followed by France, coupled with the arguably clear status of the measure under the *acquis* of State aid law, and the firm ex officio investigating action of the Commission, one could have reasonably expected a positive State aid determination. On the other hand, the perception that by enlarging the application of the MEIP test, a level playing field would have been guaranteed, together with some deference towards France (which, through its action, personified at best the *dirigiste* approach to industrial policy still common in many old and new EU countries), may go some way in explaining the eventual absolution.

Policy considerations also explain another famous EU State aid case, *PreussenElektra*, which bears a strong resemblance with the *Canada-Renewable Energy/FIT* cases. What was at issue was the German FIT, often considered the prototype of incentives in the green energy sector.[52] German legislation required regional distributors of electricity to buy all green energy produced in their area at a minimum, above-the-market price. Was it State aid? Could it be an obstacle to free movement since, obviously, if you had to source all your requirements locally, you would not get them across the border (in the instant case Austria)? If illegal, perhaps even because discriminatory, could this practice be justified because it did support the green economy revolution?

The Court eventually concluded that the measure was environmentally justified (although it did represent a measure having an equivalent effect to a quota). What matters for our purposes, however, is that, contrary to what the Commission argued, the Court denied it could amount to a State aid because there was no use of 'State resources'. The judgment can be largely explained in policy terms. Following the powerful Opinion of Advocate General Jacobs, the Court wanted to exclude the risk

[51] This leads to the constitutional question: what do we do when the Court of Justice, the ultimate arbiter of legal interpretation, gets it wrong? We cannot really expect any kind of legislative action to redress the situation in areas like that of State aid, and especially with respect to issues such as the definition where treaty language is intentionally incomplete and the role of the Commission is limited, and in any event subject to Luxembourg's case law.

[52] Interestingly, Ontario itself expressly considered the German experience as source of inspiration in the drawing up of its own FIT Programme (Howlett and D'Aliesio 2011).

that too many measures could be subject to State aid control. Importantly, like *Canada-Renewable Energy/FIT*, this ruling's implications go well beyond green energy. It is a ruling about 'regulatory' subsidies, the true elusive frontier of any subsidy control system (Rubini 2009).

There is a lot in common in the motivations of the European judges in the *PreussenElektra* case and the WTO majority panellists and Appellate Body Members in the *Canada-Renewable Energy/FIT* disputes. Both cases focus on regulatory measures. The will to draw boundaries in the case at issue, and most importantly in future cases, is the same. The reluctance to follow the path of State aid control—which provides in both systems for different but always-significant transparency duties—is the same.[53] And the two EU and WTO cases can be companioned also from the perspective of the methodology used to reach the policy outcome. Just like the *Canada-Renewable Energy/FIT* ruling is wrong because it misconstrues the notion of benefit, and via this the legal concept of subsidy itself, the *PreussenElektra* case is wrong because it incorrectly introduces in the definition of State aid a requirement (need for 'cost to government') and uses it as technical fudge to implement a policy decision of exclusion of State aid control.[54]

In conclusion, whether a legal decision is good or bad does not depend solely on whether the outcome of the judicial process is acceptable or reasonable. The methodology used in the process, and in particular its integrity, is as much as, if not more, important than the result.

[53] After unloading State aid control, the two courts follow different paths (in one case by striking down the local-content requirement, in the other by scrutinising and then justifying the purchase obligation). It may well be, however, that the different treatment—prohibition vs justification—of the two discriminatory elements follows a similar logic. While the Ontario's device is clearly protectionist (and directly affects the technology market), the German purchase obligation had the green goal to boost the generation of renewable energy itself, and its foreclosure effect was justified by the immaturity of the energy internal market (i.e., lack of certification) at the time of the decision.

[54] This was duly noted by Advocate General Maduro in the Opinion in the *Enirisorse* case. It is interesting to note that there seems to be a policy change with respect to the requirement of 'State resources'. While the Commission was never happy about it, through an often-convoluted case-law, the EU Courts consistently supported the need for this requirement. The tide seems to be changing now. Consider the recent generous constructions of the definition of State aid, put forward by the Commission and endorsed by the Court of Justice in *Bouygues*. If not an open overruling of *PreussenElektra*, this jurisprudence points to an adjustment of the approach to the definition of State aid which may also lead to a stricter approach with respect to those measures of green energy support policies which are no more considered to be necessary and hence desirable.

4 The Lessons of the Case Study for Judicial Methodology

After criticizing the approach and findings of the WTO adjudicating bodies at length, it is now time to draw more general conclusions from this case study about methodology in judicial reasoning.[55]

To recap our analysis of the Panel majority's and the Appellate Body's reasoning, and using the distinction between 'work to rule' and 'gap filling' interpretive approaches introduced by Pauwelyn and Elsig (2013), two approaches were possible and were largely put forward by the complaining parties. On the one hand, the benefit could have been established on the basis of a comparison with a benchmark or maybe a proxy (based on costs). This would have been faithful to previous, consolidated case-law. Alternatively, the WTO adjudicating bodies could have concluded, even on the basis of the clear statements and concessions of Canada, that the FIT did inherently and purposely confer a benefit. Although, if set in the context of the previous case-law, this latter line would probably have been a little bit more liberal, arguably both approaches would have been 'working to rule'.

But both the Panel majority and Appellate Body went too far, and undoubtedly resorted to 'gap filling'. This is the essence of the compassionate and holistic approach of the Panel. This is the result of introducing the concept of a carve-out, duly prepared by an erroneous narrow definition of the market, as the Appellate Body did. If you wish, both rulings are activist constructions of the concept of benefit.[56]

Now, is this gap filling or activism unwarranted? What does it tell us in terms of methodology in judicial analysis? In the next short paragraphs we attempt to answer these questions delving into the notions of integrity and coherence, courage and legitimacy, process, and outcome.

[55] The literature analyzing and commenting on WTO Panel and Appellate Body case law is rich and very sophisticated. Praise is common, but so are criticisms, as in this article. For two recent examples of strong criticism of the Appellate Body's jurisprudence, see 'Is Something Going Wrong in the WTO Dispute Settlement? (Cartland et al. 2012)' and 'The Increasing Recognition of Problems with WTO Appellate Body Decision-Making: Will the Message be Heard? (Stewart et al. 2013)'. We cite these two as notable examples because the authors are high-profile former negotiators of the Uruguay Round that led to the WTO, one former director of the Rules Division of the WTO Secretariat, leading practitioners and authors of a very authoritative account of the Uruguay Round negotiations. Even more interesting is that the motive of this criticism is often traced to a few subsidy decisions.

[56] Although these constructions do not impose obligations or restrictions but rather confer flexibility. In the context of the same judicial strategy, there are some good reasons to opine that also the narrow interpretation of the public procurement exception is more on the 'gap filling' rather than 'working to rule' side.

4.1 Integrity and Coherence

The normative claim of this article is that methodology matters in legal interpretation and more specifically that integrity and coherence are essential values in legal (read: judicial) reasoning. Integrity and coherence are the polestar of any interpretive exercise. It often takes bravery to stick to them, but it is only by abiding to them that judicial activity may respect and enjoy legitimacy. The corollary of the integrity-and-coherence claim is another claim, which will be developed below, whereby, in legal reasoning, process and methodology are more important than real or perceived just outcomes.

When we talk of integrity in legal reasoning we are not referring to anything exotic. We just allude to that reading of the law that, in Dworkin's world, offers its best justification, the one that best fits and justifies the law as a whole, in our case WTO subsidy disciplines (Dworkin 1986).[57] Within this context, coherence is one particular aspect of integrity, which is there to underline the imperative to consider the law in its entirety when performing legal interpretation (MacCormick 1978, 1984; Schiavello 2001; Soriano 2003). In other words, integrity and coherence in legal reasoning are served by always placing legal interpretation in its full legal context. This requires full consideration of the objectives of the disciplines, of the specific provisions and tests within it, and of the broader system. In a nutshell, it is a healthy call for what is simply good old teleology and systemic interpretation. But, and this is the crucial twist, this call requests to go all the way to the end, without any preoccupation for the policy implications of one interpretive choice rather than another, and without impairing what has emerged as the best reading of the law using the prevailing methods of legal interpretation.[58]

Applying these principles to the issue of the interpretation of benefit, this would mean that the benefit test can be correctly interpreted only if its role within the context of the definition of subsidy—and the role of the definition of subsidy within the broader system of subsidy control in the WTO—are properly understood. We have already put forward what, in our view, the correct understanding of this role is and consequently what interpretation Panel and Appellate Body should have followed. The 'right' answer would have been that the Ontario FIT Programme was a subsidy, although, in the eyes of the adjudicators (and, as we have speculated, perhaps also of the parties, and possibly the whole WTO constituency at large) this was probably not the most desirable outcome. But the Panel and the Appellate Body

[57] Although our understanding of integrity does resonate with Dworkin's famous theory of law as integrity, and the hunch is the same, it is not purported here that there is a full overlap with it and the complexities of Dworkin's claim.

[58] This does not necessarily mean that in all cases there will be only one, 'right' answer. Especially in hard cases there may be two, or even more, plausibly coherent readings. But this was not the case here. The interpretive approach and solution adopted by both the Panel and the Appellate Body are plainly at odds with a coherent construction of the benefit, the definition of subsidy and subsidy laws and control at large. Arguably, they were confronted with only one possible reading, the one that is espoused in this article.

should have stuck to this approach and conclusion, *irrespective* of any concern or apprehension they might have had for the practical result of this interpretation in the case at issue or in other cases, and irrespective of how they thought their ruling would have been accepted.[59] In this scenario, the tension—better the clash—between process and outcome comes out clearly. We will return to it.

Our criticism of the Panel majority and the Appellate Body is one of gap filling. To be clear, to follow integrity and coherence does not mean that interpretation will never require or result in gap filling—and, crucially, that policy considerations can never play a role in legal interpretation.

In some cases this is what the law itself—in its intended vagueness and incompleteness—require, the most notable examples being when general clauses (like necessity or proportionality) or general concepts (like public order or good faith) are employed. This may similarly happen, using WTO law, for example, with the determination of whether government revenue is 'otherwise due' in the context of the subsidy definition, or whether, in national treatment obligations, it is necessary to decide whether there has been 'less favourable treatment' or treatment 'so as to afford protection'. But this is not the case with the subsidy benefit analysis.

One concluding gloss. Our approach, with its stress on the integrity of legal reasoning and especially its indifference for the policy consequences, might be tagged as unduly formalistic.[60] It is not. If one wanted to label it, it should be called legalist. It is about taking law and legal analysis seriously.[61] Ultimately, the ethos of this position is that, contrary to what many modern legal thinkers would argue, law *is not* and *cannot* be reduced to politics or to policy-oriented decision-making, carried out through other means.[62] Law exists exactly to control and channel power. Rule of law-based systems are often contrasted to power-based systems. Certainly, law is about implementing policies but—that is the key point—policy-lobbying and influence, discussion and evaluation should come into play in the earlier stages of preparation and drafting of the law, not in its interpretation and application (apart

[59] As we are about to note, even full acceptance of a ruling does not make it legitimate.

[60] Note that there is nothing ontologically wrong with formalism, or conversely inherently right with 'substantialism'. The important points to have in mind are both the practical nature of law—law has to be *applied* to certain conducts and events—and the objectives of the specific discipline at hand. This double analysis will tell whether, in the specific circumstances, it is better to have a rule requiring a formal or a substantial analysis.

[61] The intellectual references of this *positive* claim about legalism are numerous, dating back to the Scottish philosopher David Hume up to, more recently, Neil MacCormick. Like formalism, legalism is often perceived negatively. For a recent example, although focused on the international level, see 'The Perils of Global Legalism (Posner 2009).' In the preface to the book Posner (2009) outlines its premise concept about legalism: 'The prestige of the law often leads to *legalism*, which is a view that loses sight of the social function of law and sees it as an end in itself, one that thinks of moral and political problems in legal categories and asks lawyers and judges rather than politicians to solve them', p. xii. From these few notes, the reader may have understood that we endorse a different notion of legalism.

[62] This is indeed a common persuasion in modern legal thought, from legal realism to critical legal studies, from feminism to pragmatism (Sunstein 1996).

from those cases where, as noted, the legal framework is itself responsive to the scrutiny of policy goals).

4.2 Courage and Legitimacy

We have hinted that integrity and coherence often require courage. Courage about what? The answer should be clear from our discussion on integrity in legal reasoning. Judges should be brave and resistant to policy and political pressures. They clearly live—to paraphrase the Appellate Body—'in the real world where people live and work and die' (*Hormones*, para. 48). They are certainly aware of the expectations and implications of their rulings, but, in the end, what they have to do is to apply the law and do the best possible job in this respect. This—in our view—is what integrity and coherence suggest and require.

Take it from another viewpoint. Legal decision-makers are confronted with two types of courage. It takes bravery to fill the gaps left by legislators, but it also takes courage to restrain oneself when confronted with important (policy-wise) legal decisions and do not substitute legislators. This is the kind of courage that Panel and AB should have demonstrated in the *Canada-Renewable Energy/FIT* case.

Finally, only by following integrity and coherence judicial activity may respect and enjoy legitimacy. Three brief remarks can be made in this respect.

Although it is clear that legal interpretation is a process of 'construction', of giving meaning to language that is often vague and incomplete, there is a limit to what judges can do. This conclusion is not discredited by the 'approval' or 'acceptance' of litigating parties (and maybe, when available, even other stakeholders or the public at large) for a certain outcome, or even the way to reach it. This approval, it is argued, is not sufficient to bestow legitimacy. Neither is legitimacy a matter of perception. Legitimacy—it is argued—is about process; it is about a settlement on policy issues, which is the result of serious and transparent contestability. If this is correct, only legislative or legislative-type processes, which should encompass the direct input of most of (if not all) the stakeholders as well as significant deliberation and transparency, can ensure full legitimacy.

In other words, fundamental decisions on what is *good* and what is *bad*, especially if they involve important (re-)constructions of the contract should be left to legislators.

From another perspective, judicial law-making has inherent limitations coming from its random nature (it is difficult to anticipate what prompts litigation and when) and piecemeal approach (adjudicators have to decide within the terms of reference of the litigating parties). Hence, it is a known fact that judicial solutions can only be partial.[63]

[63] On the differences of law reform enacted through judicial or legislative action, see (Raz 1979) and (Raz 1994).

4.3 Process and Outcome

The perhaps provocative corollary of the preceding arguments, and indeed of this article, is that, in legal reasoning, *process and methodology are more important than outcome*.

The main point is that the value, the essence of the law—as we see it—is in the *process* and *methodology* that lead to a certain outcome, not in the outcome itself. If the reached outcome is not just, we may then question the law as unjust. But we cannot question its nature as law and, more importantly, this questioning is not for adjudicating bodies that are called to apply it as it is. The responsibility for bad law must reside with those that are called to make it—i.e., legislators. By contrast, the adjudicators would be held responsible if the outcome is the wrong one and this can be so only inasmuch as the legal analysis leading to it is wrong. In other words, *justice* is the benchmark for laws, *correctness* is the benchmark for judicial decisions. While legislators are responsible for the former, adjudicators are only responsible for the latter.

From another perspective, process and methodology are the substance of legal reasoning and legal interpretation, and thus the core of judicial analysis. Suppose courts do not have to follow any process or methodology. It could then be argued that you do not have judicial analysis either, at least in the modern, democratic sense. You may certainly have a mechanism to settle disputes, perhaps even efficiently, but—crucially—without analysis-led outcomes, the result may just be the fruit of utter arbitrariness. It would be strictly comparable to deciding disputes by flipping the coin or divining the result from the occurrence of natural events.

If process and methodology are crucial in law—better in legal or judicial activity—then *scrutiny* and *review* become essential, inasmuch as they ensure that process and methodology have been performed correctly. This goes hand-in-hand with the necessity of *transparency*. If you are not transparent then there is no possibility for scrutiny and review and consequently no incentive to be serious on following process and methodology.

Clearly, any law (even a legal system at large) is ultimately only good if it delivers good and just results. This does not detract from the fact there is an intrinsic and unavoidable value in the clarity and correctness of the process that leads to these results. To the point that, a good solution in the case at hand, coming out from a distortion of the law, should not be accepted at ease. Law and rules are not forever, they should be liable to contestation and change.[64] But it is only by interpreting and applying them properly that gaps and inconsistencies may be unearthed. This is the main contribution to justice that adjudicators can bring: showing how a correct application of the law may lead to unjust consequences. If the legal process is

[64] To be true, this contestability is easier in some systems than in others. With a very rough approximation, experience seems to indicate that law reform is more difficult at the international level, especially if it should be endorsed through complex negotiations with several governments and various, conflicting interests at stake.

continuously tweaked to reach certain desired results, one may be led to believe that there is no real need for change or reform. Going one step further, while occasional tweaking may be necessary and welcome, if patent and universally accepted injustices need to be avoided, this course of conduct should really be limited to exceptional cases, and cannot be light-heartedly endorsed. The clear, tangible consequence is that, by proceeding in such a way, the law would just become an empty simulacrum.[65]

5 By Way of Conclusion: Absolve One, Admonish the Other

This article has argued that the integrity and coherence of legal analysis is crucial in any adjudication decision, even if the outcome deriving from what can be considered as the correct analysis is not desirable policy-wise. To show how policy concerns can lead adjudicators to commit several serious errors in their legal and economic assessment, we have used the recent *Canada-Renewable Energy/FIT* case on renewable energy support. This is an important ruling whose findings may well extend beyond the 'green sector' and whose implications may be significant.

At the close of the article, the reader may feel that we have been unduly critical of the WTO adjudicating bodies and that, considering all circumstances, they deserve more sympathy. On the premise that, had the law been different, they would not have been backed into a corner, we feel that there is room for excuse, if not for a justification. In other words, the factor that has ultimately created a pressurised environment against which the case had to be decided is the insufficiency of the regulatory framework on subsidies, its lack of clarity on how responsive it should be to important and legitimate policy concerns.

The absolution of WTO adjudicating bodies inevitably turns into an admonition to WTO Members. Rather than playing with fire in the litigation game, and shift the responsibility of difficult decisions to dispute settlement, they should take lead and responsibility and make an act of clarification of the rules, tidily indicating what type of support is permitted and what is not permitted. If Members—i.e., law-makers—do not act, either in a negotiating setting or in the relevant committees, litigation will be forced to act as a substitute. In the green economy, in the presence of rules not fully fit for purpose, and increasing competitive pressure

[65] We may conclude these reflections on the characteristic value of process and methodology in law, by asking whether the same applies in, for instance, economics. For an example where 'process' considerations may be more important for legal rather than economic analysis (i.e., where to consider the 'purpose' of a regulation in national treatment claims) (Broude and Levy 2013).

coming from green investment and trade trends, this is likely. But for the reasons explained in this article, the result may not be a pretty sight.[66]

To repeat the point: whether the regulatory framework appropriately takes the interests and objectives of subsidies into account is not the question that should be asked and answered by dispute settlement. It is ultimately a question that Members and their negotiators (that are fully accountable to their constituents and citizens) have to answer.[67] This is a call on principals—not agents—to act. The very recent success in Bali and positive efforts on the liberalization of green goods may be promising and offer some momentum for governments to act.

Acknowledgements The author wishes to thank for comments on previous drafts, and conversation on the topic, Stefano Bertea, Aaron Cosbey, Claus Dieter Ehlermann, Bernard Hoekman, Gary Horlick, Petros Mavroidis, Jorge Piernas Lopez. He also thanks Tina Martin for her assistance. This article develops the working paper: 'What does the recent WTO litigation on renewable energy subsidies tell us about methodology in legal analysis? The good, the bad, and the ugly', RSCAS 2014/05, Robert Schuman Centre for Advanced Studies, January 2014, and was already published in the Journal of World Trade 48, no. 5 (2014): 895–938. Some initial ideas of this article were presented at a CTEI workshop in Geneva (June 2013), at the DISSETTLE Workshop in Brussels (September 2013), at the second meeting of E-15 Clean Energy and the Trade System group in Geneva (October 2013) and at a seminar of the Global Governance Programme, European University Institute, Florence (December 2013). The author wishes to thank their participants for useful reaction and comments. The usual disclaimers apply.

References

Aerni P et al (2010) Climate change and international law: exploring the linkages between human rights, environment, trade and investment. German Handb Int Law 53:139–188

Bahar H, Egeland J, Steenblik R (2013) Domestic Incentive Measures for Renewable Energy with Possible Trade Implications. OECD Trade and Environment Working Papers 2013/01

Bengoextea J, Moral Soriano L, McCormick N (2001) Integration and integrity and legal reasoning of the European Court of Justice. In: De Burca G, Weiler JHH (eds) The European Court of Justice. Oxford University Press, Oxford, pp 43–44

Bigdeli SZ (2011) Resurrecting the dead? The expired non-actionable subsidies and the lingering question of 'Green Space'. Manchester J Int Econ Law 8(2):2–37

Biondi A (2013) State aid is falling down, falling down: an analysis of the case law on the notion of aid. Common Mark Law Rev 50(6):1719–1744

Bishop W (2005) From Trade to Tutelage: State Aid and Public Choice in the European Union. Presentation to Conference to ACE, Copenhagen, 2 Dec 2005

[66] The case and challenges for reform of the rules on green energy support is the focus of a broader project the author is currently completing. For an initial roadmap see 'Ain't Wastin' Time No More. Subsidies for Renewable Energy, the SCM Agreement, Policy Space, and Law Reform' (Rubini 2012).

[67] Calls for reform of subsidy rules, especially with respect to green energy support, are numerous (Aerni et al. 2010; Bigdeli 2011; Horlick and Clarke 2010; Howse 2010a, b; Rubini 2012; Steger 2010). These studies call for reform have been repeated after the *Canada-Renewable Energy/FIT* litigation. See examples (Casier and Morenhout 2013; Cosbey and Mavroidis 2014).

Breckenridge A (2013) A Matter of Definition. Commentary of Aspects of the Appellate Body's Ruling on the Canada–Renewable Energy Case in the WTO. Frontier Economics October 2013: 4–5

Broude T, Levy PI (2013) Do You Mind if I Don't Smoke? Products, Purpose and Indeterminacy in US–Measures Affecting the Production and Sale of Clove Cigarettes. International Law Forum, Hebrew University of Jerusalem, Research Paper No. 11–13

Busch ML, Pelc KJ (2011) Ruling not to rule – the use of judicial economy by WTO panels. In: Broude T, Busch ML, Porges A (eds) The politics of international economic law. Cambridge University Press, Cambridge, pp 257–279

Butler L, Neuhoff K (2008) Comparison of feed-in tariff, quota and auction mechanisms to support wind power development. Renew Energy 33(8):1854–1867

Campbell S (2013) Ontario Slashes Samsung Deal Following WTO Ruling. Windpower Monthly, 24 Jun 2013

Cartland M, Depayre G, Woznozski J (2012) Is something going wrong in the WTO dispute settlement? J World Trade 46:979

Casier L, Morenhout T (2013) WTO Members, Not the Appellate Body, Need to Clarify Boundaries in Renewable Energy Support. International Institute for Sustainable Development, 24 July 2013

CBS News (2012) WTO Rules Ontario Green Energy Tariff Unfair. CBS News, 19 Nov 2012. http://www.cbc.ca/news/business/wto-rules-ontario-green-energy-tariff-unfair-1.1185686. Accessed 20 July 2015

Charnovitz S, Fischer C (2015) Canada – Certain measures affecting the renewable energy generation sector; Canada – Measures relating to the feed-in tariff program. World Trade Rev 14:177

Cosbey A, Mavroidis PC (2014) A turquoise mess: green subsidies, blue industrial policy and renewable energy: the case for redrafting the subsidies agreement of the WTO. J Int Econ Law: 1–37

Cosbey A, Rubini L (2013) Does it FIT? An assessment of the effectiveness of renewable energy measures and of the implications of the Canada – Renewable Energy/FIT disputes. Geneva, ICTSD, E-15 Initiative, Clean Energy and Trade Group, October 2013

Deutsche Bank Climate Change Advisors (2010) Global energy transfer feed-in tariffs for developing countries. Deutsche Bank, New York

Dworkin RM (1986) Law's Empire. Hart Publishing, Oxford and Portland Oregon

European Commission (1998) Commission notice on the application of state aid rules to measures relating to direct business taxation. Off J Eur Communities 384:3–6

European Commission (2012) EU Welcomes WTO Report on Ontario's Energy Programme. http://trade.ec.europa.eu/doclib/press/index.cfm?id=861. Accessed 15 Jan 2014

European Commission (2013) Ontario's Energy Programme: EU Welcomes WTO Ruling in Support of Clean Energy. http://trade.ec.europa.eu/doclib/press/index.cfm?id=895. Accessed 15 Jan 2014

Farrell J, Shapiro C (2010) Antitrust evaluation of horizontal mergers: an economic alternative to market definition. BE J Theor Econ 10(1):1–39. http://faculty.haas.berkeley.edu/Shapiro/alternative.pdf. Accessed 15 Jan 2014

Fouquet D, Johansson TB (2008) European renewable energy policy at crossroads—focus on electricity support mechanisms. Energy Policy 36(11):4079–4092

Horlick GN, Clarke PA (2010) WTO subsidies disciplines during and after the crisis. J Int Econ Law 13(3):859–874

Howlett K, D'Aliesio R (2011) How Samsung Became an Ontario Election Flashpoint. The Globe and Mail, 29 Sep 2011

Howse R (2001) The most dangerous branch? The scope and limits of judicial power in the WTO. In: Cottier T, Mavroidis PC (eds) The role of the judge in international trade law. University of Michigan Press, Ann Arbor, Michigan, p 111

Howse R (2010a) Climate mitigation subsidies and the WTO legal framework: a policy analysis. International Institute for Sustainable Development. https://www.iisd.org/pdf/2009/bali_2_copenhagen_subsidies_legal.pdf. Accessed 24 May 2015

Howse R (2010b) Do the World Trade Organisation disciplines on domestic subsidies make sense? The case for legalising some subsidies. In: Bagwell KW, Bermann GA, Mavroidis PC (eds) The law and economics of contingent protection in international trade. Cambridge University Press, Cambridge

Hufbauer GC et al (2013) Content requirements: a global problem. Peterson Institute for International Economics, Washington, DC

Inside US Trade (2011) USTR Cautious on Japan's WTO challenge of Canadian green energy law. Inside US Trade, 23 June 2011

Inside US Trade (2013) Environmental Groups Wary of WTO Ruling on Canada Energy Program. Inside US Trade, 18 Jan 2013

International Centre for Trade and Sustainable Development (2010) Japan Challenges Canadian Renewable Energy Incentives at WTO. Bridges Weekly Trade News Digest, 14(31). http://www.ictsd.org/bridges-news/bridges/news/japan-challenges-canadian-renewable-energy-incentives-at-wto. Accessed 20 July 2015

International Centre for Trade and Sustainable Development (2011) Major green disputes move ahead at WTO. Bridges Weekly Trade News Digest, 15(29)

Lipp J (2007) Lessons for effective renewable electricity policy from Denmark, Germany and the United Kingdom. Energy Policy 35(11):5481–5495

Llewllyn KN (1960) The common law tradition: deciding appeals. Little, Brown and Company, Boston and Toronto

MacCormick N (1978) Legal reasoning and legal theory. Clarendon, Oxford

MacCormick N (1984) Coherence in legal justification. In: Peczenick A et al (eds) Theory of legal science. Reidel Publishing, Dordrecht

Maclnnis L (2010) Japan Starts WTO Dispute with Canada on Clean Power. Reuters, 13 Sep 2010. http://www.reuters.com/article/2010/09/13/us-trade-japan-canada-idUSTRE68C2RN20100913. Accessed 20 July 2015

Mavroidis PC (2001) Amicus Curiae Briefs Before the WTO: Much Ado about Nothing. NYU Jean Monnet Working Paper 2/2001, New York

Mavroidis PC (2013) 'Driftin' too far from shore – why the test for compliance with the TBT agreement developed by the TWO appellate body is wrong and what should the AB have done instead. World Trade Rev 12(3):509–531

Mesa Power Group, LLC v. Government of Canada (2011), UNCITRAL, PCA Case No. 2012-17

Motegi T (2013) Statement by Minister Motegi, Minister of Economy, Trade and Industry on circulation of the WTO Appellate Body Report on Certain Local Content Requirements under the Feed-In Tariff Program in Ontario, Canada. http://www.meti.go.jp/english/speeches/20130507.html. Accessed 15 Jan 2014

Nitsche R, Heidhues P (2006) Study on methods to analyse the impact of state aid on competition. European Commission Economic Paper 244: 122

Oxtoby D (2011) Energy in FITs and Starts. The Globe and Mail, 23 Feb 2011

Pauwelyn J, Elsig M (2013) The politics of treaty interpretation: variations and explanations across international tribunals. In: Dunoff J, Pollack M (eds) Interdisciplinary perspectives on international law and international relations: the state of art. Cambridge University Press, New York, pp 445–473

Posner E (2009) The perils of global legalism. Chicago University Press, Chicago

Public Citizen, Sierra Club (2013) Ontario's feed-in tariff: will the WTO trump climate imperatives? http://www.citizen.org/documents/ontario-feed-in-tariff-briefing-paper.pdf. Accessed 24 May 2015

Raz J (1979) The authority of law. Clarendon, Oxford

Raz J (1994) The relevance of coherence. In: Raz J (ed) Ethics in the public domain. Clarendon, Oxford

Renewable Energy Policy Network for the 21st Century (2013) Renewables 2013 – Global Status Report. REN 21, Paris
Rubini L (2009) The elusive frontier: regulation under state aid rules. Eur State Aid Law Q 3: 277–298
Rubini L (2012) Ain't Wastin' Time No More. Subsidies for renewable energy, the SCM agreement, policy space, and law reform. J Int Econ Law 15(2):525–579
Schiavello A (2001) On 'Coherence' and 'Law': an analysis of different models. Ratio Juris 14(2): 233–243
Soriano LM (2003) A modest notion of coherence in legal reasoning. A model for the European Court of Justice. Ratio Juris 16(3):296–323
Steger DP (2010) The subsidies and countervailing measures agreement: ahead of its time or time for reform? J World Trade 44(4):779–796
Stewart T et al (2013) The increasing recognition of problems with WTO appellate body decision-making: will the message be heard? Global Trade Customs J 8(11/12):390–412
Sunstein CR (1996) Legal reasoning and political conflict. Oxford University Press, New York
Sykes A (2010) The questionable case for subsidies regulation: a comparative perspective. J Leg Anal 2(2):473–523
Van Loan P (2010) Opening Markets across the Atlantic: The Next Step in Canadian free trade. Address by Canada's Minister of Foreign Affairs and International Trade to Economic Club of Canada, Toronto, 30 Apr 2010
Wu M, Salzman J (2014) The next generation of trade and environment disputes: the rise of green industrial policy. Northwest Univ Law Rev 108(2):401–474

Part IV
Conclusion

Green Subsidies and Countervailing Duty Investigations: Some Implications from Recent Examples of Korea

Jaemin Lee

1 Introduction

The WTO's *Agreement on Subsidies and Countervailing Measures* ("SCM Agreement") plays an important role in ensuring a level playing field in international trade. The agreement captures illegal subsidization practices that have distorting effects on global trade. The number of disputes involving subsidy has been in steady increase, and at the same time subsidy disputes are becoming ever more complex in many respects. In the meantime, the fact that the agreement turns a blind eye to the legitimacy of governmental policies, as it currently stands, has also drawn increasing criticism as well. For instance, the agreement does not contain a general exceptions clause as found in Article XX of the *General Agreement on Tariffs and Trade 1994* ("GATT 1994"). Nor does Article XX of GATT 1994 apply to this agreement either.

As a consequence, governmental programs introduced in response to the global problem of climate change neither receive any special treatment nor enjoy any favorable consideration. This particular situation was exemplified in the recent countervailing investigations conducted by the United States against home appliance products imported from Korea. These investigations led to the finding of countervailable subsidies and imposition of responding countervailing duties. The purpose of this article is not to criticize the outcome of the United States Department of Commerce's countervailing duty investigations, since perhaps the outcome of the U.S. investigation may have been consistent with the terms and conditions of the SCM Agreement in terms of technicalities. Rather, the purpose of this article is to underscore the apparent mismatch between the international norms (*i.e.*, climate

J. Lee (✉)
Professor of Law, Seoul National University School of Law, 1 Gwanak-ro, Gwanak-gu, Seoul 08826,
South Korea
e-mail: jaemin@snu.ac.kr

D.-Y. Park (ed.), *Legal Issues on Climate Change and International Trade Law*,
DOI 10.1007/978-3-319-29322-6_8

change related international conventions) on the one hand, and the SCM Agreement on the other, using the recent investigations as examples.

The focus of the aforementioned countervailing duty investigations was whether the Government of Korea had provided subsidies to Samsung Electronics Co., Ltd. ("SEC"), Samsung Gwangju Electronics Co., Ltd. ("SGEC"), LG Electronics, Inc. ("LGE"), and Daewoo Electronics Corporation ("DWE"). More importantly, in these investigations a variety of green subsidy programs were examined to determine if they were specific, either *de jure* or *de facto*, or if they conferred benefit. As they involve governmental assistance measures introduced as part of the government's effort to participate in the global framework to reduce greenhouse gases, investigations into these green programs as potential subsidies and ultimate finding of these programs as countervailable subsidies did raise many novel issues. This rather awkward phenomenon is likely to continue as quite a few governments are introducing green programs while the SCM Agreement does not contain any provision that treats these programs any differently than ordinary industrial subsidies.

2 BMF and LRW CVD Investigations

On December 30, 2011, Whirlpool Corporation filed a countervailing duty petition, captioned *Large Residential Washers from the Republic of Korea*, claiming that SEC, SGEC, LGE, and DWE had received a variety of countervailable subsidies such as tax credits, grants, preferential loans and other facilities from the central government and provincial governments of Korea (U.S. Department of Commerce 2012a, d). After a lengthy investigation, the U.S. Department of Commerce published its final affirmative countervailing duty determination on December 26, 2012 in *Large Residential Washers from the Republic of Korea* (U.S. Department of Commerce 2012d). The U.S. Department of Commerce further explained its reasoning in its Issues and Decision Memorandum ("IDM") and its Final Calculation Memorandum, both of which were dated on December 18, 2012. The U.S. Department of Commerce published its countervailing duty order on February 15, 2013 (U.S. Department of Commerce 2013).

As a matter of fact, this countervailing duty (CVD) investigation against Large Residential Washers (LRW) was the repetition of a similar investigation against Bottom Mount Freezer-Refrigerators (BMF) conducted 10 months previously. The same respondents and the same programs had been investigated in the BMF CVD investigation (U.S. Department of Commerce 2012b). While CVD margins were found and various green programs were determined to be countervailable subsidies, final imposition of CVD duties was spared because the U.S. International Trade Commission reached a negative determination with respect to the material injury to the U.S. domestic industry. To the extent that the BMF and LRW investigations target the same corporations and same programs, the two investigations raised the same questions and posed the same challenges. For the purpose of this article, the two investigations are treated in the same way, in a collective manner.

As a result of the two investigations, as many as eight programs of the Korean government were found to be countervailable subsidies. Many of them were so-called "green subsidy" programs designed to support environmental protection efforts or to foster green growth nationwide. Nonetheless, despite the underlying purpose of the programs, these green programs were all found to be illegal subsidies. As a matter of fact, in the two investigations some of the programs were excluded from the imposition of CVD because of the low margins stemming from these respective programs (U.S. Department of Commerce 2009). It should be noted, however, that this low-margin non-imposition is largely an inadvertent result of the unique phenomenon that the respondents are one of the largest corporations in Korea with colossal sales volume. Large sales volumes, to be used in denominators in calculating CVD margins, tend to reduce the overall margins. In the case of SEC and LGE, the large sales volume contributed to lowering the final CVD margins for them dramatically.

As such, the nature of the programs as countervailable subsidy programs remains intact despite the relatively low margins in the two investigations, and would stand ready to increase the margins, to a significant extent, in the future with respect to the corporations with smaller sizes and sales volumes. Low margins of these CVD investigations, therefore, should not disguise the structural implications embedded in the final determinations of BMF and LRW: that is, green subsidy programs have now become one of the main targets of the countervailing duty investigations.

3 An Overview of Countervailable Subsidy Findings for Green Programs

The green programs that were found to be countervailable subsidies in the BMF and LRW CVD investigations were tax credits provided by the Restriction of Special Taxation Act ("RSTA"), Korea's general tax code, and various research and development programs, both of which had been introduced to facilitate the development and dissemination of green technologies across the industrial sectors.

3.1 RSTA Article 10(1)(1)

This particular green subsidy program of Article 10(1)(1) of the RSTA was initially introduced in **2010** through the amendment of the act for the purpose of facilitating Korean corporations' investments in their respective research and development activities relating to the New Growth Engine program. The New Growth Engine program is designed to address greenhouse gas problems by assisting research activities to develop new technologies for energy efficient equipment and renewable energy sources, as Table 1 indicates. So, this program offers a tax deduction to

Table 1 Eligible technologies relating to new growth engine industry[a]

Field	Sector	Detailed sector	Applicable technology
1. LED (Light Emitting Diode) Application	A. Eco LED	(1) High efficiency RGB (Red·Green·Blue) LED	1) High efficiency blue LED Chip manufacturing technology (450~470 nm)
			2) High efficiency green LED chip manufacturing technology (530 nm)
		(2) High radiating and high density package	Wafer level chip packaging technology
		(3) Mass storage LED manufacturing facility	1) High storage Epi growth facility manufacturing technology
			2) High speed wafer level defection diagnosis/performance evaluation facility manufacturing technology
			3) Packaged LED level defection diagnosis and analysis facility manufacturing technology
	B. LED Smart Module	LED lighting module for construction	LED sensitive lighting module manufacturing technology
	C. LED Human Sensitive/Well-being Lighting	White LED Well-being lighting	1) High efficiency and High resolution white LED lighting module technology
			2) High efficiency and Full color LED lighting module technology
2. Green Vehicle System	Green car	(1) Electric car	Technology for improving energy storage system for Electric cars
		(2) Clean Diesel Car	High efficiency ultraclean small engine technology
3. Robot Application	A. High tech manufacturing robot system for clean production	Next generation energy/Information element manufacturing robot	1) Robot technology for manufacturing semi-conductors for ultra clean environment:
			2) Next generation solar cell/LED/robot technology for manufacturing fuel cell
	B. Robot system for Sustainable Social Safety	(1) Robot system for surveillance and alert	Technology for sensing surrounding environment to be used for service robots for surveillance and alert, technology for recognizing location and for driving in and out-doors and all weathers
		(2) Robot system to prevent disasters	Platform technology for small rescue robots for breaking through on rough terrain and has insulation function

(continued)

Table 1 (continued)

Field	Sector	Detailed sector	Applicable technology
	C. Lifecare Robot	Robot for helping with everyday life and housework	Service technology for helping with everyday life and chores
	D. Edutainment Robot	Education Robot system	Education robot technology for assisting teachers in kindergartens and elementary schools
4. Bio medicine and medical devices	A. Bio Medicine	(1) Genetic Cures	Technology for gene carrier manufacture and in vivo stability
		(2) Antibody cure	Technology for the development and improvement of new antibodies
		(3) Cell cures using stem cells	Technology for development of adult cell based cell cures
		(4) Bio similar	Technology for manufacture and improvement of similar manufacture
	B. Advanced Medical Device	(1) Senior friendly and standard-of-living-enhancing medical device	Intelligent Implant Functional Electric Stimulus system
		(2) Advanced Image Diagnosis Device	Transducer and refined structure diagnosis technology for real time 4Dimension ultra sonic waves
5. New Material Nano Convergence	A. Ultralight Magnesium material	High Functional Magnesium parts	Warm Forming Technology of High intensity Magnesium parts
	B. Functional Nano-film	Conductive Nano film	1) Nano coating technology
			2) Technology to Manufacture High molecule Retardation Film
	C. New Material	For use in Electrical and Electronic Industry	Technology for Manufacturing Novolak resin for use in Photoresist
6. New renewable energy	A. Solar cell	(1) Silicon and CIS Solar cells	High efficiency and continuous processing technology
		(2) Dye sensitized solar cell	Core material, large scale modularized technology
	B. Fuel cell	Development of core part for fuel cell	Technology for manufacturing parts solely for fuel cells
	C. Clean coal energy	Coal gasifier and synthesizer	Technology for gasification of low quality coal and clean energy
	D. Waste energy	Making waste resources into energy	Technology for liquefaction and gasification of waste

(continued)

Table 1 (continued)

Field	Sector	Detailed sector	Applicable technology
7. Contents—Software	A. Embedded· System software	(1) Embedded software	1) Real time high reliability verification technology
			2) Technology to analyze vulnerability in software
			3) Embedded operation system technology
		(2) System software	Platform technology for Cloud computing
	B. Intelligent interface	(1) Voice Interface Software	Multi-lingual voice recognition and multi-lingual/multi-tone voice synthesis technology
		(2) Multi-lingual processing software	Technology for user participation type automatic translation, multilingual automatic translation and conversation type automatic interpretation
8. CO_2 reducing energy	CCS (Carbon Capture & Storage)	(1) Plant for separation Combustion Gas (CO_2)	Technology for storing post combustion CO_2
		(2) Plant for separation coal gasifier O_2	Technology for storing pre combustion O_2
		(3) Plant for separating oxyfuel combustion CO_2	Oxyfuel combustion technology and low cost large scale oxygen manufacturing technology
		(4) Plant for storing CO_2	1) Technology for exploring for geological storage and establishment of Database
			2) Technology for transporting and storing CO_2
9. High Value Food Industry	A. Environment friendly Safe Food	System for reducing harmful factors in food	Non-heated pretreatment and Processing technology
	B. Functional Food	Technology Convergence based Functional Food	Analysis of bioactive substance and index substance investigation technology
10. High water treatment industry	Optimizing water system management	Membrane filtration system	Membrane material and membrane module technology

Source: Appendix 7 of the Enforcement Decree of the Restriction of Special Taxation Act
Note: Appendix 7 contained in Paragraph 1 of Article 9 of the Enforcement Decree sets forth a list of core technologies that are covered by the New Growth Engine program
[a]Paragraph 1 of Article 9 of the Enforcement Decree, Appendix 7 contained in the Enforcement Decree sets forth a list of core technologies that are covered by the New Growth Engine program

corporations with respect to certain personnel expenses and equipment cost falling under the eligible category. The basic statutory basis for this program is found in the Article 10(1)(1) of the RSTA and the paragraph 1 of Article 9 of the Enforcement Decree. Appendix 7 of the Enforcement Decree sets forth a list of eligible technologies relating to the New Growth Engine program as below.

As can be seen from the table, the eligible technologies arguably cover a wide range of economic sectors and are designed to support new energy development activities, a scheme critical to cope with the threat from the global climate change. More specifically, under the scheme of this program, 20 % (30 % in the case of small and medium sized corporations) of (i) the personnel expenses accrued for the researchers engaged in the R&D activities for the eligible technologies listed in the Appendix 7 and administrative staffs who directly support such activities stipulated in the Enforcement Decree, and (ii) the equipment costs accrued for samples, parts, raw materials used in the course of such R&D activities are eligible for the deduction from the taxes to be paid by corporations. Thus, the direct objective of the program is to facilitate corporations' research activities for the development and adoption of new technologies for new sources of energy nationwide. This program was found to be a countervailable subsidy: (i) as much as tax credit is provided, financial contribution by the government was found to exist in accordance with Article 1.1(a)(1)(ii); (ii) benefit was confirmed to exist in the amount of tax deduction; and (iii) specificity was confirmed as much as the eligible technologies are stipulated (*de jure* specific).

3.2 RSTA Article 10(1)(2)

Article 10(1)(2) of the RSTA and paragraph 2 of Article 9 of the Enforcement Decree of the RSTA provide another basic statutory basis for the green subsidy programs. Also the Appendix 8 of the Enforcement Decree sets forth a list of core technologies that are covered by the program.

As Table 2 illustrates, the core technologies falling under the eligibility categories are also arguably directly related to the development and utilization of the new technologies for new energy sources. Under the scheme of this program, 20 % (30 % in the case of small and medium sized corporations) of (i) the personnel expenses accrued for the researchers who are engaged in the R&D activities for the core technologies listed in the Appendix 8 and administrative staffs who directly support such activities stipulated in the Enforcement Decree, and (ii) the equipment costs accrued for samples, parts, raw materials used in the course of such R&D activities are eligible for the deduction from the taxes payable by a corporation. Yet again, this program was found to be a countervailable subsidy: (i) as much as tax credit is provided, financial contribution by the government was found to exist in accordance with Article 1.1(a)(1)(ii); (ii) benefit was confirmed to exist in the amount of tax deduction; and (iii) specificity was confirmed as much as the eligible technologies are stipulated (*de jure* specific).

Table 2 Core technologies covered by Article 10(1)(2) Program[a]

Field	Sector	Details
1. Metal	A. Smart Metal	Technology for the design and manufacture of metal material friendly to the human body
	B. Green Process	1) Technology for limiting and recovering recycling clad metal
		2) Low temperature direct reduction technology using hydrogen
	C. Energy Metal	1) Technology for manufacturing large scale super alloy steel designed for high efficiency generator
		2) Design and manufacture of pipes with high density/high ductile API and pipes with durability of abrasion
2. Production base	A. Critical function production base	Technology for minimizing and functionalizing frame
	B. Green energy production base	1) Technology for manufacturing blade for wind energy generator
		2) Technology based on production of high efficiency, light weight, heat radiating parts for next generation lighting
3. Textile	A. Health and welfare textile	Technology for manufacturing medical textile structure
	B. Green environment textile	Technology for manufacturing environment separating high density textile composites
	C. Thinking textile	High tech digital medical technology with combination combat function for strategic use
	D. Convergence textile	Technology for manufacturing ultra-light/high elastic/high density carbon fiber
4. Improving energy efficiency	A. Fuel cell material	Solid Oxide Fuel Cell (SOFC) material technology
	B. Secondary cell	Technology for manufacturing next generation high performance lithium secondary cell
5. Greenhouse emission gas	A. Fuel system for cleaning substitutable crude	Technology for high class treatment of Synthetic crude from oil shell
	B. Processing system of Clean synthetic fuel Gas-to-Liquid (GTL)	Technology for integrated processing of Compact GTL attached to ship

(continued)

Table 2 (continued)

Field	Sector	Details
6. Resources	Gas hydrate	1) Technology for gas hydrate development production
		2) Technology for detailed elastic wave exploration for areas likely to have natural resources
7. Electric Power	A. Smart Grid	Technology for design and manufacture of smart grid
	B. Technology for smart supply of electric power	Technology to upgrade and apply intelligent supply of electric power system
8. Nuclear Power	A. Reactor Coolant Pump (RCP) Technology	Technology for design of reactor coolant pump
	B. Nuclear Power material	Technology for developing heat resistant cold nuclear power material
	C. Radiation usage	Technology for Large scale monitoring processing system using radiation
	D. Advanced Power Reactor	Technology for standard design of advanced power reactor
	E. Pressurized Water Reactor	Technology for development core code for nuclear power
9. Security of Intelligence and information	Protection of common base	1) Low voltage/high speed/ultra-light encryption technology
		2) Technology to prevent and respond to side channel attacks
10. Clean base	A. Uni-material	Technology for manufacturing environment friendly tires using urethane uni-material
	B. Green printing products	Technology for developing electric functional ink that is heat treated at low temperature
	C. Resource recycling	Development of technology for manufacturing ferrosilicon and pig iron using smelt slag
11. Chemical processing	A. Green chemical processing	1) Processing technology for converting chemical substances from biomass
		2) Technology for aromatization of Heavy Hydrocarbon Fraction
		3) Naphtha cracking high value olefin technology
	B. Human friendly material	Technology for manufacturing industrial adhesive to be used at high temperature and sustainable

(continued)

Table 2 (continued)

Field	Sector	Details
12. RFID (Radio Frequency Identification)-USN (Ubiquitous Sensor Network)	A. Smart energy management	Real time Energy Monitoring and controlling technology
	B. Smart Supply Chain management	Ultra-light low voltage RFID security platform technology
13. Ubiquitous Computing	A. Human computing	Technology for processing bio-information and computing technology for use in human body
	B. Cloud computing	Technology Cloud security
14. Compound substances medicine	Candidate substance for Innovative new medicine	Technology for discovering new candidate substance for medicine
15. Space	Satellite	1) Technology for developing satellite parts
		2) Technology for developing parts to be attached to satellite
	Space launch vehicle	Technology for developing space launch vehicle parts
16. Display	AMOLED (Active Matrix Organic Light Emitting Diode) material	Technology for manufacturing laser induced thermal imaging for producing big screen AMOLED pixel
17. Semi-conductor	Semiconductor material	Technology for developing High-k dielectric precursor for Atomic Layer Deposition (ALD) and Chemical Vapor Deposition (CVD)
18. Shipping	High value ships	Compander for Liquefied Natural Gas Carrier (LNGC), LNG Floating Production Storage Offloading (FPSO)

Source: Appendix 8 of the Enforcement Decree of the Restriction of Special Taxation Act
Note: Appendix 8 contained in Paragraph 2 of Article 9 of the Enforcement Decree sets forth a list of core technologies that are covered by the New Growth Engine program
[a]Paragraph 2 of Article 9 of the Enforcement Decree, Appendix 8 contained in the Enforcement Decree sets forth a list of core technologies that are covered by the New Growth Engine program

3.3 RSTA Article 10(1)(3)

This is yet another R&D tax deduction program. RSTA Article 10(1)(3) is an investment tax credit program for which all Korean companies are eligible. The program provides a tax credit, *i.e.*, a deduction of corporate income tax that would otherwise be owed, for expenditures on research and human resource development activities. The program has been in effect since 1982. This program was widely utilized: for instance, well over 11,000 Korean companies claimed tax credits under Article 10(1)(3) on their 2010 tax returns, which cover the period of investigation

(POI) of the two CVD investigations.[1] Unlike the previous two tax programs—RSTA Articles 10(1)(1) and 10(1)(2), this is a general R&D programs without a specific list of eligible technologies. Any R&D activities not covered by the previous two are eligible for tax deduction under Article 10(1)(3). As energy efficiency enhancement has been understood to be the core subject of R&D activities of most companies, the bulk of R&D expenditures falling under Article 10(1)(3) also relate to green activities or new energy sources. In that respect, the core characteristic of this program is not that different from the previous two tax programs.

Nonetheless, this program was also found to be a countervailable subsidy: (i) as tax credit is provided, financial contribution by the government was found to exist in accordance with Article 1.1(a)(1)(ii); (ii) benefit was confirmed to exist in the amount of tax deduction; and (iii) specificity was confirmed as certain corporations received disproportionate share of the benefit (*de facto* specific). Only the specificity finding was different from the previous two programs. In fact, the U.S. Department of Commerce stated that the Article 10(1)(3) investment tax credit was generally available as a matter of law, thus not *de jure* specific. However, it still found that the tax credit provided to one of the respondents, SEC, was disproportionately large, making it *de facto* specific under 19 U.S.C. §1677(5A)(D)(iii)(III)—*i.e.*, according to the final determination SEC received 24 % of the total benefit granted to all Korean companies.

3.4 Green Technology Program

Since technology is regarded to be a crucial factor in promoting and achieving green growth in all economic sectors, the development of relevant green technology has been regarded as the main pillar of a state's green policy. In the case of Korea, the technology development has been one of the most important components of the government's five-year Green Growth Plan ("5YGGP"), which was adopted in January 2009. Under the plan, the Korean government selected twenty-seven core technologies to provide support to. The main objective of the program is to facilitate research, development and commercialization of green technologies, including financial support for these activities. The provision of support under the program has been automatic as long as the budgets earmarked for this program are available and as the applicant corporation shows the technological capacity to conduct the R&D activities (Department of Commerce 2012c).

The respondent companies in the BMF and LRW CVD investigations used this program. The U.S. Department of Commerce has previously determined that this program constitutes a countervailable subsidy: (i) the financial support from the

[1] Information was not available concerning the number of companies that claimed this credit on their 2011 returns.

government constitutes a grant within the meaning of Article 1.1(a)(1)(i); (ii) benefit was confirmed to exist in the amount of the grant in accordance with 19 CFR 351.504(a); and (iii) specificity was confirmed as much as the eligible technologies are stipulated (*de jure* specific). Here again, the specificity finding was hinged upon the fact that financial assistance under this program is expressly limited by law to 27 core technologies related to "Green Technology," and is therefore *de jure* specific under section 771(5A)(D)(i) of the Act (Department of Commerce 2012c). Furthermore, the grants provide a financial contribution because they provide a benefit in the amount of the grant.

3.5 Green Partnerships Program

Likewise, the "Green Partnerships" program was implemented in 2003 in an effort to introduce a mechanism through which large corporations could provide Small and Medium-sized Enterprises ("SMEs") with their expertise and knowhow regarding environment-friendly business management, clean production technology, and cultivate necessary human resources. These partnerships allow SMEs to accumulate expertise and technologies which enable them to produce parts and materials in an environment-friendly manner. So, this program provides a statutory scheme to lead large corporations to share their environmental protection technology with underprivileged SMEs so that the latter can also participate in the nationwide green drive.

The fund necessary for the formation of the partnership is borne by the government and participating large corporations. The joint funds thus pooled are deposited in the account of the participating large corporations, wherefrom the funds are transferred to the participating SMEs as the needs arise. In a sense, the participating large corporations take on the role of project managers, and provide participating SMEs with their expertise and knowhow for establishing environment-friendly business practices using the financial resources from the fund. Between the period of 2003–2011, 35 large enterprises have participated in this program and 970 SMEs have received the assistance therefrom. This program was also found to be a countervailable subsidy: (i) the financial support from the government constitutes a grant within the meaning of Article 1.1(a)(1)(i); (ii) benefit was confirmed to exist in the amount of the governmental grant in accordance with 19 CFR 351.504(a); and (iii) specificity was confirmed as the recipients of the benefit were limited to certain industrial sectors (*de facto* specific) (U.S. Department of Commerce 2012c). One thing to note regarding this program is that while the program was introduced to assist SMEs, large corporations are also beneficiaries since the enhanced energy efficiency reduces the production cost of the SMEs which would then provide benefit to large corporations using parts produced by the SMEs. As the SEC and LGE were the participating large corporations, the final determination found that the respondents were also beneficiaries of the programs even if they were not SMEs

themselves. This analysis again underscores the broad nature of a green subsidy finding: even if the direct recipient has nothing to do with the subject products, it may help the respondent producing the subject merchandise receive indirect benefit one way or another.

4 Green Programs and the SCM Jurisprudence

This chapter aims to analyze the green programs in accordance with the core jurisprudence of the SCM Agreement. In particular, this chapter addresses the issue of specificity and benefit to see if the green programs could be deemed to be specificity-absent or benefit-absent given the unique characteristics of these programs. An argument could also be made that these programs do not constitute a financial contribution in the first place because it may ultimately lead to the establishment of the general infrastructure of a state.[2] For the purpose of this article, focus is placed on the specificity and benefit analysis, leaving out the financial contribution issue, as these were two issues that were mainly addressed in the BMF and LRW CVD investigations.

4.1 Specificity Analysis Regarding Green Programs

As explained above, in the BMF and LRW countervailing duty investigations the U.S. Department of Commerce determined that these tax programs were specific to the Korean respondents, and thus constituted countervailable subsidies (U.S. Department of Commerce 2012e). More specifically, the U.S. Department of Commerce confirmed that either *de jure* or *de facto* specificity is established, based on its determination that the tax programs were limited to certain industries by law, or that the respondents had received a disproportionate share of the assistance under the programs.

[2] Article 1.1(a)(1)(iii) of the SCM Agreement thus provides that:

(a)(1) there is a financial contribution by a government or any public body within the territory of a Member (referred to in this Agreement as "government"), i.e. where:
(iii) a government provides goods or services *other than general infrastructure*, or purchases goods; (emphasis added)

See also the statement "In determining the proper legal characterization of a measure under Article 1.1(a)(1) of the SCM Agreement, a panel must assess whether the measure may fall within any of the types of financial contributions set out in that provision. In doing so, a panel should scrutinize the measure both as to its design and operation and identify its principal characteristics." (WTO 2008, 2012, 2014).

4.1.1 Large Corporations? In the Case of Tax Credits Under RSTA 10(1)(3)

The U.S. Department of Commerce's finding of specificity relating to Sub-paragraph 3, Paragraph 1 of Article 10 of the RSTA is based on the finding that certain companies received a disproportionate share of the tax benefit (U.S. Department of Commerce 2011). According to the Korea's Response to the U.S. Department of Commerce's Questionnaire on September 19, 2012 and Korea's Verification Report, it was confirmed during investigations that all corporations, regardless of its size, are eligible to utilize this program as long as they satisfy the requirements set forth in the statute.[3] The tax credit is available to *any* Korean company that conducts R&D activities relating to eligible core technologies. Stated differently, *all* R&D activities are eligible for the support under RSTA 10(1)(3) and the only requirement imposed by the provision is basically the ceiling of the deduction to be applied. With respect to the number of recipients and amounts of tax credits under this tax provision, it was confirmed that as many as 11,000 corporations used this tax credit under Article 10(1)(3) during the POI (U.S. Department of Commerce n.d.).

Nonetheless, in its final determination the U.S. Department of Commerce found *de facto* specificity simply based on the fact that the amount of deduction that the respondents received during the POI was larger than those of other corporations (U.S. Department of Commerce n.d.). The fact that the respondents received a more-than-average tax credit under this program, however, is hardly surprising because the respondents were one of the largest corporations in Korea during the POI, and thus total tax credit amount they would claim under the relevant tax statutes would be almost spontaneously larger than comparable tax credits to be claimed by other smaller corporations. Put differently, the only fact that the investigating authority based its specificity determination for this program was the fact that the respondents made larger eligible R&D expenditure and thus received larger tax credits than other Korean companies. A question may be raised as to whether the mere amount of a tax credit for an individual corporation can prove that the assistance under the tax program is *de facto* specific to the corporation if the disbursed amount is proportional to the size of a corporation. If this analysis is accepted, the size test can replace the specificity test.

Where, as here, the essence of a program is the application of a fixed statutory deduction percentage, automatic application of such a percentage and a resulting calculation outcome may not necessarily satisfy the specificity requirements set forth in the SCM Agreement. With a tax deduction rate set at a certain level, actual amounts of deductions for individual recipients commensurate to the size of eligible activities or investments reported by the recipients, in and of themselves, may not

[3] This paper has consulted some documents, which are personally owned but currently inaccessible, since the investigation of the case was finished. The author did not have these document included in the bibliography but stated the reference in the manuscript.

satisfy the *de facto* specificity requirement. Corporations that have made sizable investments, incurred heavy expenses, and conducted broader eligible activities would automatically get a larger-than-average deduction than other corporations. Provision of tax credits based on such automatic calculation of tax deduction amount would hardly rise to the level of *de facto* specificity as provided in the SCM Agreement.

As stated in Statement of Action (H.R. Doc. 103–316), the main objective of the specificity analysis is to differentiate between a government assistance that is broadly available and widely used, and a subsidy provided to discrete segments of the economy.[4] The amount-only approach adopted in the BMF and LRW investigations may not be consistent with this basic objective of the specificity analysis. As a matter of fact, there are no rigid rules for determining specificity, and rather a specificity analysis should be based on a "rule of reason."[5]

If large corporations are rendered in a more vulnerable position with respect to a specificity test and thus ultimately a finding of a countervailable subsidy, the R&D activities by these corporations to meet the demand of the international community in general would be significantly challenged. If anything, at least within the confinement of the SCM Agreement these corporations might face a disincentive in carrying out activities for green purposes. As large corporations are supposed to play an important role in R&D activities regarding green programs, imposing disincentives for these activities would not serve the interest of the international community at large. Such being the case, the size-only approach may not only be problematic in terms of the specificity jurisprudence of the SCM Agreement. From the policy perspective, the approach would also raise a new obstacle to the global effort for green activities.

4.1.2 Limited in Number? In the Case of Tax Credits Under RSTA 25(2)

In its final determination, the U.S. Department of Commerce also found that tax credits under the Article 25(2) of the RSTA conferred a countervailable subsidy. According to the Korea's Responses to the U.S. Department of Commerce's Questionnaire (Appendices Volume) on June 29, 2012, the underlying rationale for the introduction and maintenance of the tax program under Article 25(2) of the RSTA is that the enhancement of the energy efficiency in the business sectors may

[4] Statement of Administrative Action, H. Doc. 103–316, 103d Cong., 2d Sess. 929–30 (1994).

[5] See *Royal Thai Government v. United States*, 30 CIT 1072, 1090, 441 F.Supp.2d 1350, 1368 (2006) "The specificity test {of 19 U.S.C. § 1677(5A)(D)(iii)} was intended to function as a rule of reason and to avoid the imposition of countervailing duties in situations where, because of the widespread availability and use of a subsidy, the benefit of the subsidy is spread throughout an economy"; see also Statement of Administrative Action ("SAA"), H.R. Doc. No. 316, vol. 1, 103d Cong., 2d Sess. (1994).

help enhance the efficiency in the general national economy by promoting the development and utilization of green energy facilities. There is no statutory limitations regarding the eligibility of this program: all kinds of facilities related to green energy facilities or energy efficiency facilities are covered by the tax program. Despite this general applicability, the U.S. Department of Commerce found that this tax program was *de facto* specific by finding that the recipients of the program was "limited in number." It is questionable whether a brief conclusory statement that "actual recipients of tax credits under this program are limited in number" provides a reasonable basis to find specificity within the meaning of Articles 1.2 and 2 of the SCM Agreement.

As with any other pilot program, the number of recipients in the early stage of a program may not be high in the first place. Once the technology seeps into the industrial sectors and associated risks become smaller with a learning curve, more and more companies would then decide to pursue the activities and end up claiming the benefit under the program—tax credits under Article 25(2). As such, with respect to the green programs, it may not be entirely appropriate to see if only certain companies decided to use the program during the POI. The utilization of the program should be examined based on a longer period so as to account for the risk factors associated with the new activities such as energy reducing facilities construction and renewable energy development. As such, a specificity analysis as seen in the Article 25(2) analysis may not be appropriate for the green programs or policies. Here also, focusing on the relatively small number of recipients may not be entirely consistent with the specificity jurisprudence of the SCM Agreement as it would apparently turn a blind eye to the nature of the program at issue.

More than anything else, what would perplex these corporations is the fact that this tax program was introduced in order to participate in the efforts of the global community so as to reduce greenhouse gases, to curtail the consumption of fossil energy sources to the extent feasible, and to expand the utilization of renewable and clean energy sources as much as possible. Given the global efforts to achieve this critical objective, treating tax credit program such as Article 25(1) as illegal subsidies would run the risk of undermining the efficiency of the global effort to cope with this problem.

4.1.3 Benefit Analysis in Green Programs

In the present investigation, the U.S. Department of Commerce has examined various R&D programs administered by Korean government's agencies. The U.S. Department of Commerce found that Green Technology Program and 21st Century Frontier Program were countervailable subsidies during the POI. Noting the basic objective of these programs, one could argue that treating these R&D programs as a countervailable subsidy undermine the legitimate governmental

policies which are required or at least in line with the global effort. The SCM Agreement is mindful not to interfere with the Members' governments' inherent authority to pursue legitimate public objectives and economic policies within the parameters of various provisions of the agreement, as it is well affirmed by the panel in *Canada-Aircraft* (WTO 1999). An argument can be made that in many instances the R&D programs play a central role in the economic development and/or academic enhancement of many countries, and thus are closely related to the pursuit of legitimate public policies of various kinds. As a matter of fact, almost all governments are actively involved in numerous projects to foster technological and scientific development of the academic institutions and industries within their territories.[6] Consequently, genuine R&D programs, particularly the environmental protection R&D programs, deserve and require a careful scrutiny by an investigating authority in a countervailing duty investigation. The nature, objectives, operation schemes and actual impact of the R&D programs should be carefully examined and such investigation should not unduly restrict the authority of a government in carrying out important socio-economic function such as coping with climate change threats.

In the meantime, Articles 2 and 14 of the SCM Agreement require the application of a benchmark, to the extent feasible, in the analysis of benefit. As benefit is a relational concept that requires a comparison with market terms, identifying a market benchmark seems inevitable in a proper benefit analysis. The benchmark provides an objective yardstick in measuring the existence and amount of benefit conferred. Nonetheless, it is also true that sometimes a benchmark is not available due to the uniqueness of the transaction. Debt restructurings provide a good example. In such circumstances, a benefit analysis is forced to find an alternative. One of the viable alternatives is to see if the transaction is commercially reasonable. As a market for a massive R&D projects is not readily available, the commercial reasonableness approach also seems inevitable in this regard as well. In terms of carrying out a proper commercially based benefit analysis, an argument can be made that the concept of 'true' beneficiary sometimes requires us to assess long-term results. One party may get less benefit in the short-term but the party may still get even or end up receiving more benefit in the long run. A similar situation may also be found in the business sector. Sometimes a business entity focuses on securing long-term profits rather than enjoying a short-term loss. Viewed from this perspective, it is arguably far from easy to pronounce a governmental program as commercially reasonable or unreasonable by examining a single snap shot of the complex transaction. An investigating authority conducting a CVD investigation should apply a thorough analysis for benefit based on practical consideration in the real business sector.

[6] The nature of the R&D programs administered by the U.S. federal government and state governments of the United States are well documented in recent subsidy disputes between the European Union and the United States (WTO 2011).

5 Green Technology Program

With respect to the R&D programs, an argument can be made that the Green Technology program investigated by the U.S. Department of Commerce does not confer countervailable subsidies. As explained above, under the program 27 core technologies were selected through a process of consultation with experts from various governmental agencies, private sectors, and academic circles. The 27 technologies include the technologies developed and utilized over the span of the entire economic sector of a state. As the 27 technologies involve activities that fall under jurisdiction of multiple governmental agencies, a wide range of government's agencies are involved in the operation of the program. In the case of 2011, those agencies of the Korean government were: Ministry of Education, Science and Technology; Ministry of Knowledge Economy; Ministry of Environment; Ministry of Land, Transport and Maritime Affairs; Ministry for Food, Agriculture, Forestry and Fisheries; Ministry of Culture, Sports and Tourism; Ministry of Health and Welfare; Rural Development Administration; Korea Forest Service; Defense Acquisition Program Administration; Korea Meteorological Administration. In other words, this is a program that involves almost multiple governmental agencies in Korea for the purpose of promoting green growth in all economic sectors.

Not only the broad spectrum of the governmental agencies, the 27 technologies covered by the Green Technology R&D support were also as broad as to cover the entire spectrum of the economic activities. They were as follows:

- Modeling for technologies
- Estimating the impact of climate change and applied technologies
- The silicon-based solar battery
- Mass production of non-silicon-based solar cells and key original technologies
- Bio energy
- Design and construction techniques for upgraded light-water reactors
- Technologies for eco-friendly nuclear reactors and nuclear fuel recycling systems
- Design and construction of fusion reactor technologies
- High efficient hydrogen manufacturing and hydrogen storing technology
- Next generation fuel cell system
- Technologies for eco-friendly plant growth
- Integrated gasification technology and applied power generating technology
- Technologies for high efficiency and low pollution applied vehicles
- Intelligent transportation and distribution technologies
- Creating ecological space and urban generation technology
- Eco-friendly environment and low energy construction technologies
- Green process technologies considering certain environmental loads and expectation of energy consumption
- Technologies maximizing the energy efficiency of LED for lighting and IT devices

- Technologies enhancing the efficiency of intelligent power network (power IT) and electrical devices
- Secondary high efficiency cell producing technology
- Collecting, storing and processing CO_2
- Technology processing of Non-CO_2
- Estimating the quality of water and management technology
- Technology procuring alternative water resources
- Reducing waste, recycling and energy making
- Monitoring and processing technology for harmful substances
- Virtual reality technology

The statutory basis for this program, Article 26 of the *Framework Act on Low Carbon and Green Growth* further underscores the general applicability of the program. The provision stipulates in pertinent part:

Article 26 (Facilitation of Research, Development, and Commercialization of Green Technology)

(1) The Government shall establish and enforce measures, including the following matters, to facilitate research, development, and commercialization of green technology:

1. Collection, analysis, and furnishing of information related to green technology;
2. Development and diffusion of techniques for evaluation of green technology;
3. Financial support for the facilitation of research, development, and commercialization of green technology; and
4. Fostering of human resources for green technology and international cooperation therein.

(2) The Government shall facilitate convergence of technology for information and communications, nanotechnology, and biotechnology and shall promote swift transformation into the low carbon, knowledge-based economy by securing intellectual property of green technology.

(3) If any measure under paragraph (1) is to be included in the basic plan for science and technology under the Framework Act on Science and Technology, the Committee's opinion shall be sought in advance.

The apparently broad nature of the support program indeed raises a question whether a benefit analysis can be done in a short-sighted manner. The broad nature of the technologies listed and the number of governmental agencies involved together with the general structure of the enabling legislation all indicate that a benefit, if any, can be identified and confirmed on a long-term basis. As a matter of fact, the benefit of the program may not just the recipient of the tax program in a given year. Rather, the benefit is accorded to the society in general of which the recipient corporation constitutes a part. Even at the level of the corporation at issue, the benefit or loss of the corporation should be viewed from the long-term

perspective. As the nature of the green program is that all economic constituents of a society chip in for the benefit of everyone, individual benefit analysis may not necessarily provide an accurate picture of benefit. The discussion of benefit of Green Technology program raises this particular question.

6 Green Partnership with SMEs

The difficulty of ascertaining the real beneficiary in terms of green programs is also confirmed by the Green Partnership with SMEs program as well. As explained above, this program represents government's arrangement to connect large corporations and SMEs so that the latter can learn from the former in the course of developing and applying new energy technologies. So, the focus of the program is to provide benefit to the SMEs in order for them to be able to adjust their business activities to the fast changing domestic and international environmental regulation, again to comply with the greenhouse gas reduction commitments. The direct beneficiaries of this partnership, therefore, are the participating SMEs, and large corporations participate in the partnership as a provider of expertise and knowhow. But at the same time, the large corporations also stand to enjoy the benefit as a result of the enhanced energy efficiency of the SMEs. Likewise, the beneficiaries are also various elements of the society in general because they also stand to take advantage of the enhanced energy efficiency of SMEs. Under these circumstances, stating the beneficiaries of the programs as just SMEs or large corporations is not entirely accurate. If anything, the beneficiaries are the society in general, in which case the benefit analysis under the SCM Agreement should take this aspect into account. Of course, such a benefit analysis would be quite complex, if not entirely impossible.

The example of Green Partnership also underscores that the benefit analysis of the green programs are distinct from ordinary industrial subsidy programs and that a proper benefit analysis would require a much more complex discussion of the relevant transactions arising from the programs. When all these unique elements are duly taken into account, certain green programs may end up surviving the benefit scrutiny and thus avoid the designation of illegal subsidies under the SCM Agreement. As with the specificity analysis, this aspect of the benefit discussion of the green programs should also receive appropriate attention as states engage in meaningful discussions.

7 Conclusion

All CVD investigations are almost always extensive and far-reaching, covering a wide range of governmental programs and policies of respondent states' governments. With respect to the recent BMF and LRW CVD investigations involving green subsidies, in the course of the CVD investigations each spanning over a year,

documents well beyond 10,000 pages were submitted to the investigating authorities in a series of questionnaire responses. While the legitimate nature of the programs in terms of facilitating green programs has been explained, the nature as such failed to render these programs subsidy-proof under the present SCM Agreement. This is so because the current SCM Agreement does not include an exception for green programs or something inductive to green efforts. The examples of recent CVD investigations against certain Korean products show this aspect of the agreement. This article is not intended to criticize particular investigating authorities—such as U.S. Department of Commerce—or to justify domestic laws and regulations under which these authorities operate—after all the final determination of the U.S. Department of Commerce may be indeed consistent with the technical aspect of the SCM Agreement. Rather, properly understood, these recent examples reflect the mismatch between the norms and the realities. The subsidy norms simply do not seem to catch up with the fast changing nature or the demand of the international community.

In addition, even under the current jurisprudence of the SCM Agreement, a plausible argument can be made that these legitimate green programs may be found to be either non-specific or benefit-absent, thereby constituting non-countervailable subsidies. For instance, these programs are arguably not specific, either *de jure* or *de facto*, to certain industries or enterprises. They are widely available and have been utilized by a large number of companies within the territories of a Member. Likewise, these programs do not provide benefit and the real beneficiaries are not the corporations themselves, but rather the society in general. If so, these corporations are merely intermediaries having the real beneficiaries enjoy the benefit of the programs. This rationale would strengthen the argument that benefit in fact does not exist within the specific meaning of the SCM Agreement.

All these unique aspects of the green programs should be put under careful scrutiny of the collective discussions of the international community in its future discussions of subsidy norms including the amendment of the SCM Agreement. Future subsidy norms should be adjusted to be compatible with the critical demands of the international community as much as feasible to remain sustainable.

References

U.S. Department of Commerce (2009) Certain Hot-Rolled Carbon Steel Flat Products from India: Final Results and Partial Rescission of Countervailing Duty Administrative Review. 74 Fed. Reg. 20923 (May 6, 2009). http://www.gpo.gov/fdsys/granule/FR-2009-05-06/E9-10496. Accessed 30 Oct 2015

U.S. Department of Commerce (2011) Countervailing Duty Investigation of Bottom Mount Combination Refrigerator-Freezers from the Republic of Korea: Post-Preliminary Analysis of New Subsidy Allegations (Dec. 21, 2011)

U.S. Department of Commerce (2012a) Countervailing Duty Investigation of Large Residential Washers from the Republic of Korea, Response of Samsung Electronics Co., Ltd to the Department's February 15, 2012 Questionnaire (Apr. 9, 2012)

U.S. Department of Commerce (2012b) Issues and Decision Memorandum for the Final Determination in the Countervailing Duty Investigation of Bottom Mount Combination Refrigerator-Freezers from the Republic of Korea (Mar. 16, 2012)
U.S. Department of Commerce (2012c) Issues and Decision Memorandum for the Final Determination in the Countervailing Duty Investigation of Large Residential Washers from the Republic of Korea (Dec. 18, 2012). http://enforcement.trade.gov/frn/summary/korea-south/2012-31078-1.pdf. Accessed 30 Oct 2015
U.S. Department of Commerce (2012d) Large Residential Washers from the Republic of Korea: Final Affirmative Countervailing Duty Determination. 77 Fed. Reg. 75975. http://www.gpo.gov/fdsys/granule/FR-2012-12-26/2012-31078. Accessed 30 Oct 2015
U.S. Department of Commerce (2012e) Large Residential Washers from the Republic of Korea: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination With Final Antidumping Determination. 77 Fed. Reg. 108 (Jun. 5, 2012). http://usitc.gov/trade_remedy/731_ad_701_cvd/investigations/2011/Preliminary/77fr33181_preliminary_results_cvd_korea.pdf. Accessed 30 Oct 2015
U.S. Department of Commerce (2013) Large Residential Washers from the Republic of Korea: Countervailing Duty Order. 78 Fed. Reg. 11154 (Feb. 15, 2013). http://www.gpo.gov/fdsys/granule/FR-2013-02-15/2013-03626. Accessed 30 Oct 2015
U.S. Department of Commerce (n.d.) NSA Post-Preliminary Analysis
World Trade Organization (1999) Canada - Measures Affecting the Export of Civilian Aircraft. WT/DS70/R, Panel Report, WT/DS70/R, Geneva
World Trade Organization (2008) China – Measures Affecting Imports of Automobile Parts. Appellate Body Reports, WT/DS339/AB/R, Geneva
World Trade Organization (2011) United States-Measures Affecting Trade in Large Civil Aircraft. Panel Report, WT/DS353/R, Geneva
World Trade Organization (2012) United States – Measures Affecting Trade in Large Civil Aircraft (Second Complaint). Appellate Body Reports, WT/DS353/AB/R, Geneva
World Trade Organization (2014) Canada – Certain Measures Affecting the Renewable Energy Generation Sector. DS426. https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds426_e.htm. Accessed 30 Oct 2015