



Tatiana Falcão

A Proposition for a Multilateral Carbon Tax Treaty

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47

A Proposition for a Multilateral Carbon Tax Treaty

Why this book?

This book proposes a multilateral framework through which countries may tax mineral resources and capture the full polluting potential of those energy resources through the tax. The framework is designed so that the tax is only levied once through the mineral resources' production chain. A compensation mechanism is proposed to account for non-combusted carbon by-products.

The book thus addresses the following issues:

- which type of tax is the most appropriate to capture oil, gas and coal's polluting ability;
- what the best framework is to propose a multilateral environmental tax;
- what the best legal instrument is to support an environmental tax applied under the defined terms;
- the compatibility of the proposed tax with international trade regulations; and
- what the most suitable intergovernmental organization is to host the legal instrument and to administer the aforementioned tax.

The research draws from the existing principles of environmental regulations and international environmental agreements (e.g. the UN Framework Convention on Climate Change, the Kyoto Protocol and the Paris Agreement) to place the proposed Multilateral Carbon Tax Treaty within the framework of environmental protection and establish a dialogue between the environmental legal framework and the proposed tax instrument of resource mobilization. The book further explains why the Paris Agreement has provided the international community with the right momentum for a new tax framework to be adopted within the dual context of tax and environmental law. Another important feature of the framework proposed is the establishment of how and where the proposed multilateral framework should be inserted within the existing intergovernmental structures. The book thus analyses the engagement of each of the main intergovernmental organizations (UN, OECD and WTO) in the topic of environmental regulation and places the multilateral instrument within this framework. The legitimacy of the tax, as well as the revenue destination, is addressed from tax, trade and environmental perspectives, covering all angles of admissibility of the tax. Suggested tax rates and tax bases are drawn from existing country practices. Finally, a template for the negotiation of the Multilateral Carbon Tax Treaty is included at the end of the book.

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Preface

This book proposes an interdisciplinary study on a variety of topics within the fields of law, economics and environmental regulation. The main topics covered are international taxation, environmental taxation, carbon taxation, environmental law and trade law.

The subject area of the book is the law of multilateral tax agreements as applied to environmental taxes. The objective is to propose a multilateral framework through which countries may tax energy mineral resources and capture the full pollution potential of those resources through the tax. The framework is designed so that the tax, a carbon tax, is only levied once in all of the mineral resources' (oil, gas and coal) production chains. There is a compensation mechanism for non-combusted carbon by-products.

The book thus addresses the following issues:

- What tax would be most appropriate to capture oil, gas and coal's polluting ability?
- What would be the best framework for which to propose a multilateral environmental tax?
- What would be the best instrument to support an environmental tax applied under those terms?
- Would the tax be consistent with international trade regulations?
- Which would be the most suitable intergovernmental organization to administer the aforementioned tax?

Based on the research conducted, the author concludes that the most appropriate tax would be a carbon tax, applied on an upstream basis (at source) upon extraction of the mineral resources from the ground. The book reveals that scientists are capable of making mathematical correlations between the amount (measured in weight or volume) of mineral resource and the number of carbon atoms present in the mineral resource. The book further demonstrates that the most appropriate instrument to support one such tax applied on a global scale is a multilateral agreement. This multilateral agreement, the Multilateral Carbon Tax Treaty, would be consistent with international trade regulations of the World Trade Organization (WTO), provided that certain conditions are met.

Likewise, it is established that the WTO would be one of the intergovernmental organizations managing such a tax. Since the United Nations has, to date, been the intergovernmental organization with powers to propose internationally agreed environmental principles, laws and agreements, the

author proposes for the treaty to be administered through a platform for joint cooperation between the United Nations and the WTO. As a result, the multilateral framework through which the carbon tax is to be administered would be compatible with the United Nations' existing international environmental framework.

A template for the negotiation of a Multilateral Carbon Tax Treaty is suggested at the end of the book.

Contextualizing the Problem

1.1. Executive summary

Global problems require global solutions. This is the ultimate message that the author intends to leave the reader with after going through the many pages that constitute this book. This book is an attempt to provide a tax solution to a surfacing problem that is likely to determine the way we are to lead our lives for the coming century: climate change.¹ It is not per se a novel subject; it has been knocking on our doors for many years. What is novel about this book is the way it proposes to address the issue of climate change, namely by providing the appropriate international regulatory framework in which countries can act.

Most of the ideas brought forward in this research have, to some extent, already been raised by economists, local tax administrations or policy-makers. They have been drafted taking into account a specific country's national context or have been proposed as a regional measure. The research will show that the climate change-driven policies implemented at the regional or national level have been conceived with developed countries' economies in mind. Very few researchers have attempted to verify the effects of carbon emissions – or to price them – in a developing or emerging economy context. This book fills that gap by putting together the policy pieces that have been successful in the past for a specific country or region and bringing them to a universal level of potential global reach.

1. There are three categories of pollution that are worth distinguishing: (i) domestic environmental damage, which has no spillover into other countries and the effects of which are entirely circumscribed into the territory of one state; (ii) cross-border pollution, which harms a few surrounding countries outside the territory of the polluting state (such as acid rain or a polluted river that crosses borders); and (iii) global environmental damage that harms all or a large number of states. The most prominent example of the last of these is climate change. A separation of pollution cases was made in the 1992 General Agreement on Tariffs and Trade (GATT) report on trade and the environment, in which it addressed the issue of different types of pollution with respect to trade measures. See S. Khalilian, *The WTO and Environmental Provisions: Three Categories of Trade and Environment Linkage*, Kiel Institute for the World Economy, No. 1485 (2009), p. 19. See also <http://www.ciesin.org/docs/008-082/008-082.html>.

That is because no single nation or group of nations is sufficiently important to significantly affect the rate of global carbon emissions.² According to the OECD, even if a single country phased out its emissions completely in 1991, global warming would be unaffected.³ If all of the OECD member countries came together in 1991 in a joint action to reduce emissions, they still would not have been able to reduce global CO₂ emissions significantly. The phasing out of fossil fuel use in OECD member countries would have been outweighed by an increase in non-OECD fossil fuel consumption over the decades following 1991. This affirmation is still currently true.

As denoted throughout this book, unilateral approaches could lead to a competitive disadvantage by those applying a carbon tax. Energy-intensive industries would have the option to relocate to other countries or regions unburdened by the carbon tax, resulting in a potential increase in global carbon dioxide emissions as a result of unilateral uncoordinated action.⁴ This is true in a scenario in which countries are unable to align their policies to create an international regulatory environment in which to price carbon.

Over the course of the research, the author sought to discover why the climate-related measures currently in force are not sufficiently apt to result in an environmental improvement. She concentrated on carbon emissions because, as extensively explained throughout this book, carbon is a long-lived greenhouse gas. Carbon takes a very long time to be eliminated naturally and is very efficient in trapping and absorbing heat. As a result, it is one of the largest contributors to global warming.⁵

Current tax and non-tax climate change policies are unable to result in an environmental improvement (in the form of a reduction in carbon-based emissions) due to (i) administrative complexity; (ii) burdensome methods by which to measure emissions; (iii) mismatched policies in different countries; (iv) the extensive concession of tax holidays (in the form of exemptions, subsidies, credits and others); (v) tax recycling; and (vi) the

2. J. Poterba, *Tax Policy to Combat Global Warming: On Designing a Carbon Tax*, National Bureau of Economic Research (NBER), Working Paper No. 3649 (1991), p. 3.

3. P. Hoeller and M. Wallin, *Energy Prices, Taxes and Carbon Dioxide Emissions*, OECD Economics Department, Working Paper No. 106 (OECD, Paris, 1991), p. 7.

4. *Id.*, at p. 15.

5. *See* ch. 6, sec. 6.2.; United Nations Framework Convention on Climate Change (UNFCCC), art. 1(4); and *Fourth Assessment Report – Climate Change 2007: Working Group I: The Physical Science Basis: TS.2.1 Greenhouse Gases* (S. Solomon et al. eds., Cambridge University Press, 2007), available at https://www.ipcc.ch/publications_and_data/ar4/wg1/en/contents.html.

administration of very low carbon prices, to name a few. All of the enumerated problems could be attributed to one cause: politics.

Countries administering unilateral carbon-based measures⁶ and international organizations overseeing international agreements⁷ intended to create obligations for only a limited number of countries are all faced with the same problem, i.e. the lack of a coherent approach with which to tackle carbon emissions on a global scale. The fear of losing domestic industrial competitiveness towards foreign markets and the need to not overburden domestic taxpayers with a bill that should ultimately be shared with the rest of the world⁸ have, for many years, paralyzed action driven by climate change.

The way this book proposes to resolve this problem is through the administration of a Multilateral Carbon Tax Treaty (MCTT), which would engage both developed and developing countries on equal footing.⁹ The multilateral context will provide the correct environment for developed and developing countries to discuss a global price for carbon and have their suggestions interjected with the same weight.

As suggested by the title of the treaty, the objective is to create a binding obligation for countries to apply a tax. This is an extremely unusual commitment to be made internationally, where the standard is for countries to come

6. Please refer to ch. 5 for a thorough analysis of the recent unilateral initiatives undertaken by some countries with respect to carbon taxation.

7. In this respect, *see*, for example, the UNFCCC (available at <https://unfccc.int/resource/docs/convkp/conveng.pdf> and the Kyoto Protocol (available at <http://unfccc.int/resource/docs/convkp/kpeng.pdf>), both of which only create binding emissions reduction obligations for “developed countries” (referred to in the UNFCCC as “Annex I” countries).

8. *See* ch. 6, sec. 6.7. on carbon leakage; and ch. 5, summarizing the tax incentives granted by those countries applying carbon taxes and describing the unilateral policies and tax breaks granted by individual countries taking into account the need to maintain the domestic industry’s international competitiveness. Concern over international competitiveness was one of the main reasons leading to the repeal of the Australian carbon pricing mechanism. *See* the Clean Energy Legislation (Carbon Tax Repeal) Act 2014, No. 83 (17 July 2014), available at <https://www.legislation.gov.au/Details/C2014A00083>. For comments on the Swedish approach to avoiding carbon leakage, *see* S. Akerfeldt and H. Hammar, *CO₂ Taxation in Sweden: 20 Years of Experience and Looking Ahead*, available at https://www.globalutmaning.se/wp-content/uploads/sites/8/2011/10/Swedish_Carbon_Tax_Akerfeldt-Hammar.pdf, pp. 4-5. *See also* S. de Bruyn, D. Nelissen and M. Koopman, *Carbon leakage and the future of the EU ETS market* (2013), available at https://www.cedelft.eu/publicatie/carbon_leakage_and_the_future_of_the_eu_ets_market/1361.

9. *See*, in this respect, ch. 10, art. 9 of the Multilateral Carbon Tax Treaty (MCTT); ch. 3, sec. 3.7. on the legal environmental framework adopted to support the MCTT; ch. 7, sec. 7.3.3. for the developed/developing country interrelation within the MCTT; and ch. 2, sec. 2.3.3. supporting the introduction of a multilateral agreement.

to an agreement on how to partition a tax. Levying a tax is a state action that is intrinsically connected to the enforcement of a country's sovereign rights.¹⁰ As a result, international tax treaties seldom create an obligation to tax or to identify the level at which the tax should be levied.¹¹

A carbon tax is hardly a tax of the type that is usually included in international tax conventions. This book will show that it would be administrated as an excise tax,¹² and many of the tax obligations would therefore be akin to those of a customs duty.¹³ Since customs and tax obligations are dealt with under different umbrellas in the international context,¹⁴ synergies are bound

10. For example, the OECD Model Agreement to avoid double taxation was issued as a model agreement so that the OECD member countries may reference the model agreement when drafting their own bilateral tax treaties to partitioning income amongst other countries on a source/residence basis. That allows the member countries the opportunity to continue drafting tax policy as they see fit without interfering with their sovereign rights to tax. See *OECD Model Convention with Respect to Taxes on Income and on Capital* (OECD, Paris, 2014), available at <https://www.oecd.org/ctp/treaties/2014-model-tax-convention-articles.pdf>. The European Union, the most advanced existing customs and trade union, also maintains the Member States' exclusive right to apply direct taxes. Under the Treaty of Lisbon, the European Union has competence to regulate the internal market to avoid distortion of competition. Regulations may deal with tax issues (such as exchange of tax information), but the European Union cannot institute a direct tax altogether. The introduction of new direct taxes or the harmonization of legislation concerning indirect taxes requires unanimous acceptance from all Member States. See the Treaty on the Functioning of the European Union, ch. 2, arts. 110-113, available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:12012E/TXT>.

11. To create an international obligation to tax may interfere with a state's sovereignty to tax and may create constitutional issues in certain jurisdictions operating constitutional tax systems. This point was brought to discussion when deciding which form a multilateral instrument geared towards the "harmonization" of bilateral income tax treaties and international tax practices would take. Ultimately, it was decided that a multilateral instrument with forestalling BEPS as one of the main objectives would have to take the form of a model agreement, with optional provisions from which countries could pick and choose according to their domestic tax policies. See OECD, *Developing a Multilateral Instrument to Modify Bilateral Tax Treaties, Action 15 -2015 Final Report*, OECD/G20 Base Erosion and Profit Shifting Project (OECD, Paris, 2015), para. 12, p. 18, available at <http://dx.doi.org/10.1787/9789264241688-en>.

12. See ch. 2, sec. 2.2.3.3.

13. That is, taking into account the fact that the excise tax would, at times, be applied at the border when the item subject to tax is imported into a country under the tertiary allocation system. See, in this respect, ch. 7, sec. 7.3.3.; and ch. 10 on the MCTT, art. 9.

14. International direct taxes are usually discussed either in the OECD or the UN fora. Trade-related issues and indirect taxes are generally discussed in the World Trade Organization (WTO), and international customs obligations are discussed in the World Customs Organization. These institutions have few channels of communication and engagement in each other's work mandates. Under the proposed treaty, a joint framework is suggested to operate in the administration of the treaty. Ch. 9, sec. 9.4. proposes a joint WTO-UN administration of the environmental programme in charge of the treaty.

to be created in the administration of the proposed Multilateral Carbon Tax Treaty.

Creating synergies between international organizations could be described as the secondary “unstated” theme underlying this book because creating synergies ultimately translates into getting the politics right in order for the right legal instruments to be put into place. After analysing why countries have failed to implement unilateral regulatory action that would be effective in reducing carbon-based emissions, the author has devised four underlying objectives that the proposed MCTT should promote and will be essential in creating a coherent international environment. They are referred throughout the book as “prongs”, and the policies tested in this book are thus required to pass the “four-prong test”:

- (1) they must generate revenues for the state imposing the tax and for the countries participating in the multilateral framework;¹⁵
- (2) they must change consumer behaviour by creating a significant price difference that would lead a consumer to opt for the less carbon-intensive product;¹⁶

15. It is important for the national tax administrations to generate revenues so that they may invest in the development of new, carbon-free technologies to sponsor the efficient use of energy and promote new energy resources. The reduction in carbon consumption and a shift towards other, cleaner energy sources will represent a change in paradigm. That will require public funding in order to occur. Private parties only promote research in projects that have the potential of being profitable, and therefore, a change in the way the world consumes energy will require public sponsorship. Ch. 5 contains a country survey, in which the main carbon and energy tax systems are analysed. The country survey demonstrates that most countries applying a carbon tax have opted to make the tax revenue neutral by recycling the tax, meaning that the revenues accumulated via the tax are used to reduce other taxes or are returned to the population at large via tax benefits. The result is a government devoid of surplus resources to invest in other technologies or to promote alternative energy resources. This was the case in British Columbia, for instance, where one of the goals of the tax administration was to develop new technologies, support environmentally responsible resource development and promote British Columbia as a major renewable resource exporter. The goals had not been met by the end of the 2011 Fiscal Plan due to a lack of monetary resources. See Government of British Columbia, Ministry of Finance and Corporate Relations (19 February 2008), *Budget and Fiscal Plan 2008/09 to 2010/11 - A Budget for Climate Action*, pp. 12-24, available at <http://www.bcbudget.gov.bc.ca/2008/bfp/default.html#4>.

16. Ch. 5 demonstrates that all of the countries opting for a carbon tax (British Columbia, Denmark, Finland, Japan, Norway and Sweden) did so in order to change consumer behaviour and reduce carbon consumption. For countries in the European Union applying carbon taxes together with energy taxes, the combination is usually framed so that the carbon tax acts to change people’s consumption patterns, and the energy tax is the revenue generator. The combination is only necessary because carbon taxes tend to be unpopular policy options (they affect the competitiveness of the national industry in the international market). As a result, the revenues derived from the carbon tax are recycled in order to harness favourable public opinion. The carbon/energy combination is not necessary, provided

- (3) they must reduce carbon release into the atmosphere and, in that way, confer a positive environmental result on the MCTT as a policy option;¹⁷ and
- (4) they must allow MCTT members' internationally traded products to compete with non-treaty members' products, in parity of conditions (i.e. no price distinction between the products subjected to a carbon tax and those that were not) by allowing them an opportunity to apply a border tax adjustment when acquiring or consuming carbon-intensive goods from non-member countries.¹⁸

All of the above objectives are to be pursued simultaneously and none of them are to have precedence over the other, although they will be discussed separately in this book.

The reader will note that prongs (1) and (3) are contradictory and could not possibly be pursued by the same instrument. A tax on carbon can only generate revenues provided that (i) the consumption of carbon-based products

that countries allow the carbon tax to also act as a revenue generator. Provided that the tax is applied consistently across the board by all countries, the competitiveness issues lose relevance. *See*, in this respect, ch. 4, sec. 4.3. on the oil and gas industry; and ch. 5, sec. 5.3., summarizing the survey results and discussing the application of the four-prong test for each of the countries analysed.

17. As further demonstrated in ch. 2, sec. 2.2.4.2., a carbon tax is capable of achieving a reduction in corresponding carbon emissions into the atmosphere. It has an environmental purpose, which is to provide for a reduction in pollution release into the environment, as well as a positive environmental effect, to the extent that the additional levy on carbon is capable of influencing a reduced consumption of carbon-intensive fuels.

Imposing a tax on carbon produces a series of very unique direct effects. Direct correlations are created between the amount of carbon present in an energy product and (i) its revenue-generating capacity; (ii) its carbon dioxide release into the atmosphere; and (iii) the price increase verified on the retail price of that product. Since the carbon tax's final burden will be passed on to the final consumer, the operation of the carbon tax is, in itself, capable of creating a price differentiation between more and less carbon-intensive products, where the former are more heavily taxed than the latter. *See*, in this respect, OECD, *Climate and Carbon – aligning prices and policies*, Environment Policy Paper No. 1 (OECD, Paris, 2013), p. 23.

18. This is the competition prong. The only way a tax can be applied by multiple parties without affecting these countries' industries' international competitiveness is if they are able to apply the same tax on the products deriving from countries that are not party to the agreement or do not apply a similar carbon tax. The WTO has some very specific rules to stop WTO members from applying taxes at the border towards some members and not others. Ch. 8, and in particular, sec. 8.5., examines whether the member countries would be allowed to apply border tax adjustments (BTAs) towards non-signatory countries. The answer is positive, provided that the countries act under a multilateral agreement. *See* G. Metcalf and D. Weisbach, *The Design of a Carbon Tax*, Harvard Environmental Law Review, Vol. 33 (2009), pp. 542-544, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1324854.

increases; or (ii) the tax rate increases over time. A reduction in the release of carbon-based emissions will result from a reduction in the consumption of carbon-based products and will invariably lead to a reduction in the revenues accumulated via the carbon tax. This is an expected outcome and is the mechanism used to verify that the tax treaty is being administered successfully in different countries. The policy's success will be verified by a country's inability to collect surplus revenues deriving from the carbon tax.¹⁹

This is *the* characteristic that will distinguish this tax treaty from all other international climate-related policies currently in force. In order for it to work, the tax treaty must address all the major sources of carbon-based emissions while imposing the least burden on tax administrations to comply with the tax obligation. The only way this can be achieved is by imposing a tax on extraction of all fossil fuel resources – a source-based tax, levied on a territorial basis.

When analysing the basic structure of the United Nations Framework Convention on Climate Change (UNFCCC), the most authoritative legislation piece in the administration of climate-based emissions, one sees enormous attention devoted to countries' emissions-reporting obligations. That is due to the fact that the UNFCCC was introduced almost simultaneously with the Kyoto Protocol, which imposes a quantitative restriction on carbon emissions. It is a policy designed to operate nationally or regionally – therefore on a downstream basis at retail level – and concentrating on emissions control.

The Paris Agreement²⁰ was recently introduced with the intent to correct that by recognizing the importance of integrated, holistic and balanced

19. This is a result that is already demonstrated in at least one country applying a carbon tax, i.e. Denmark. Denmark is one of the countries included in the country survey in ch. 5, and has been applying a carbon tax since 1992. In 2011, Denmark launched a new Energy Strategy, foreseeing a long-term transition into renewable energies and the total removal of the reliance in fossil fuels. Denmark understands that this programme will result in a reduction in tax revenues derived from the very high tax rates applied to fossil fuels. The government has acknowledged an expected reduction in the tax base representing a big portion of the Danish revenue base. This measure will be countered through the introduction of new taxes and countering measures meant to forestall a public deficit. See Danish Government, *Energy Strategy 2050 – from coal, oil and gas to green energy*, No. 2011:7 (February 2011), pp. 5, 6 and 9, available at http://www.danishwaterforum.dk/activities/Climate%20change/Dansk_Energistrategi_2050_febr.2011.pdf.

20. *Paris Agreement*, adopted by the 21st Session of the Conference of the Parties under the Framework Convention on Climate Change (FCCC) on 12 December 2015; see <https://unfccc.int/resource/docs/2015/cop21/eng/109r01.pdf>.

non-market approaches²¹ to assist developed and developing countries in fulfilling their commitments to reduce greenhouse gas emissions. It is the first time since the inception of the UNFCCC that the parties to the Convention have made an overt commitment to make use of non-market approaches, including:

- carbon regimes, such as a carbon tax to put a price on carbon;
- energy and environmental taxes to discourage activities having a harmful impact on the environment; and
- sustainability incentives in the form of tax credits, deductions, subsidies and other corporate incentives aiming to encourage certain behaviours.

The proposed tax treaty focuses on the use of a specific non-market carbon approach, i.e. the carbon tax, due to its effectiveness in raising revenues, in particular in developing countries, where there is a general lack of capacity to enforce taxes and oversee trading in a regulated market.

The carbon tax acts by imposing a pre-emptive price on the emissions that a carbon atom is likely to generate as a result of its combustion. It is a tax applied at the upstream level, on the mineral ore, prior to its combustion.

The default rule is for the carbon tax to be levied whenever the oil, gas or coal is extracted from the ground.²² That would allow a country to tax the full carbon-emission potential of the mineral ore. When taxing carbon at the midstream (refinery) or downstream (consumption) phases of the production process, the tax is unable to take into account the emission losses that have already occurred when processing the mineral ore.²³ These losses can account for almost 60% of the carbon potential of the mineral ore, depending on its quality.²⁴ Therefore, applying a carbon tax at downstream level (consumption) is equivalent to taxing only 40% of the carbon-based emission potential of any fossil fuel.

21. *Paris Agreement*, art. 6(8).

22. *See* ch. 6 for further information on the item subject to tax. This book opts to tax fossil fuels, i.e. oil, gas and coal, only as a starting point. Therefore, the tax is only applied to the extraction of oil, gas or coal.

23. Ch. 4 explains the oil, gas and coal production processes, demonstrating which are the upstream, midstream and downstream phases.

24. *See*, in this respect, United Nations, IPCC, *Fugitive Emissions from Oil and Natural Gas Activities*, in *Good Practice Guidance and Uncertainty Management*, in *National Greenhouse Gas Inventories* (UN IPCC 2000), pp. 103-127, available at http://www.ipcc-nggip.iges.or.jp/public/gp/bgp/2_6_Fugitive_Emissions_from_Oil_and_Natural_Gas.pdf. *See also*, on coal fugitive emissions, United Nations, IPCC, *IPCC Guidelines for National Greenhouse Gas Inventories* vol. 2: *Energy*, ch. 4, *Fugitive Emissions* (UN IPCC 2006), available at http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_4_Ch4_Fugitive_Emissions.pdf.

The carbon tax acts as a price control mechanism. As a result, countries are capable of making a direct correlation between the amount of carbon extracted and the amount of revenues collected. Consequently, it is possible to infer the amount of emissions released into the atmosphere without increasing the compliance burden. The success of the tax can be easily measured by its inability to generate tax revenues in the long run.

A reduction in carbon-based emissions and the consumption of carbon-rich mineral resources will necessarily lead to the development of new, cleaner energy resources.²⁵ Fixing the carbon price at a high enough price will provide private entities with enough incentive to develop new, carbon-free energy resources in an attempt to reduce the cost of production and the cost of doing business. Likewise, the generation of extra revenue resources derived from the carbon tax will present governments with surplus funds with which to finance research and development of new technologies to be employed in the manufacturing sector. The development of new, ground-breaking technology is typically funded by public administrations, and the administration of a carbon tax might be the only way to raise the funds required to advance in this field. A carbon fund would be created to dedicate a portion of the revenues accumulated via the carbon tax to research and development.²⁶

That does not mean that the MCTT will defend earmarking the revenues derived via the carbon tax for one such purpose. Earmarking revenues via an international instrument is extremely difficult due to the different legal and constitutional constraints imposed by domestic systems. However,

25. “There is currently a credibility gap between what governments are saying about climate change and the policies they have in place. Most businesses do not take governments seriously when it comes to climate, primarily because many governments have inconsistent and incoherent policies and then often keep changing them, sometimes retroactively. This makes businesses reluctant to invest in greener technologies.” See A. Gurria, *A call for zero emissions*, World Economic Forum (24 January 2014), available at <https://www.weforum.org/agenda/2014/01/call-zero-emissions-climate-bailout-option/>.

26. The carbon fund is intended to provide equilibrium between heavy revenue earners and poor revenue earners (i.e. resource-rich countries and those poor in natural resources). It would allow for research in ground-breaking technology to exist where the manpower and physical resources are available. One of the characteristics of this regime is that most of the revenues will derive from developing countries, which tend to have fewer means to promote research and innovation. Developed countries are resource-poor, so they will not tend to have as many resources to devote to technology development. By equalizing the contributions to a common fund, the resources can be utilized where the means for research and development exist. See, in this respect, K. Kennedy, M. Obeiter and N. Kaufman, *Putting a Price on Carbon: A Handbook for US Policymakers*, World Resources Institute, Working Paper (April 2015), p. 2.

earmarking the revenues derived from the carbon tax should be stimulated in the countries with no legal impediments to doing so.

For the countries already applying carbon or energy taxes or employing an emissions trading scheme, the introduction of the proposed MCTT will allow them the opportunity to reform and perfect their national tax systems to eliminate the deadweight policy aspects that currently impede them from administering effective environmental taxes capable of generating a desirable environmental result.

The international context in which the treaty is to be proposed would provide countries that already are sympathetic to the administration of environmental taxes the “excuse” and the legal support to justify the imposition of harsher measures domestically.

These would be the main required actions for a country entering the proposed carbon tax treaty to reform its current domestic practice:

- Action 1: Put a significant price on carbon. This can be done through the proposed carbon tax. A simultaneous emissions trading system (ETS) would be available for the countries wishing to go through with ETSs, since the language of the proposed tax treaty does not eliminate the possibility of imposing a simultaneous ETS.
- Action 2: Reform fossil fuel subsidies. Countries should reconsider their approach to subsidies. Urgent reform is needed in all countries to phase out fossil fuel subsidies that encourage carbon emissions. The subsidization of fossil fuels is a policy that objectifies a result that is diametrically opposite to the imposition of a tax because a subsidy, by definition, aims to stimulate a behaviour (in this case, consumption of the carbon-intensive product). Cutting down on subsidies means putting fossil fuels on equal footing, from a pricing perspective, with all other similar energy products. While some countries often justify the use of fossil fuel subsidies with the need to avoid an undue price burden on the poor, it remains unclear whether subsidies are, in fact, the most efficient instrument for achieving this goal.
- Action 3: Remove exemptions and all forms of border tax adjustments on exports and have targeted, specific revenue-recycling measures. Countries should be prepared to uphold a carbon price that is applied consistently across all sectors of the economy. No sector is to obtain more advantageous conditions. Revenue-recycling measures have the

effect of attributing some of the surplus revenues accumulated via the carbon tax to the poorest segments of society in order to alleviate the inherent regressivity of the tax. Revenue recycling can occur through direct redistribution of income (through social security safety nets, for example) or by contributing the surplus revenues to the general budget so that the government can reduce other taxes, such as taxes on income or labour. Under this international model, the objective of the proposed carbon tax is to create surplus income that could be reinvested to be used in the development of clean technologies or for environmental objectives, for example, through the creation of an emergency climate fund or a forest preservation fund. The destination of the revenue should not be diverted for other goals of the general budget, although governments should consider ways of addressing the potential regressive impacts of the tax on the poor, particularly on women.

- Action 4: Address incoherent and inconsistent policies. Governments should stand back and consider the entire range of signals they are sending to producers, investors and consumers. A key question is whether non-fossil energy investments can currently compete with fossil fuels in terms of their risk-return profile with the policy settings in place, both domestically and internationally. Appropriate measures should be put in place to create an environment for non-fossil energy-producing technologies to thrive and compete with fossil fuels.
- Action 5: Reform policies so that environmental taxes are applied on an upstream basis. Most countries currently applying environmental taxes do so on a downstream basis, at a retail level. The proposed tax should be applied on an upstream level, upon extraction or importation of the fossil fuel resource into the country.

The actions outlined above will help create a clear, long-term signal that the price of emissions will only go one way (i.e. up) and put the world on a trajectory towards zero emissions.

This leads to the last point, which is who (i.e. which intergovernmental organization) is to hold the whip that will make countries join the proposed treaty. For a variety of reasons, this book concludes that the power to administrate the proposed multilateral tax treaty should be a joint effort between the United Nations – under the UNFCCC initiative and the Paris Agreement – and the World Trade Organization (WTO), which would initially propose the treaty as a plurilateral treaty until the time comes when all of the WTO members accept it and administer it as a multilateral tax

treaty. The OECD would not be an administering body due to its restricted, developed-economy-oriented membership, but a good synergy between the United Nations, the WTO and the OECD in environmental taxation would be to the benefit of the proposed treaty.

The WTO would be conferred the duty to oversee the treaty, which is compatible with its competencies covering both indirect taxes and environmental policies having an effect on trade. The WTO has a Dispute Settlement Body (DSB), which would be fully apt to resolve conflicts regarding the administration and application of the carbon tax and give it binding power. None of the other intergovernmental organizations have such a powerful mechanism available. It is expected that in the beginning, countries will have difficulties in assessing how the DSB would decide on global pollution cases since it has never done so. One would have to infer as to what their rationale would be from the existing WTO case law. However, countries are likely to become less averse over time as the DSB develops its own case law dealing with global pollution cases.

Global problems require global solutions, and only the WTO, via the DSB, is competent to come up with binding solutions to the conflict cases that will inevitably arise from the administration of the proposed tax treaty.

1.2. Book structure

Section 1.3. will provide the overall structure of the book. The order of the chapters is relevant, as each chapter builds on information previously revealed. The only exception is chapter 4, which may be referred to at any time since it provides useful information concerning the oil, gas and coal businesses. Since most of the industrial jargon is only referenced in chapters 6 and 7, the business chapter was placed in order to provide contextual insight into the extractive industries. However, some of the phases of the production process are also discussed in chapter 2. Therefore, the reader may refer to chapter 4 at different reading stages for additional information.

The subject of climate change is interdisciplinary. This means that there are parts of the book that are completely unrelated to tax. They delve into environmental policy, social aspects, economy, corporate law, industry practice, international law, diplomacy and politics. These are all subjects that are important to instruct the tax policy decisions made throughout this book.

1.3. Book outline

Chapter 2 is the opening chapter, and therefore, it contextualizes how a policy should be proposed if its aim is to derive an environmental benefit. A few instruments are considered in devising the policy, amongst them a carbon price, a subsidy, a prohibition, a tax or a fee. Ultimately, the decision is made for a tax. The chapter explores what type of tax this would have to be if it were to realize the objectives of the four-prong test, i.e. a direct or indirect tax, ad valorem or in rem. The type of tax is then discussed, and the conclusion reached is for an excise tax. Next, the item subject to tax is identified as being the carbon atom. The chapter provides a definition for environmental taxes as conceived for the purposes of this treaty. The last part of the chapter discusses what would be the best instrument to support a carbon tax while also pursuing the objectives of the four-prong test. The unequivocal solution is for an MCTT.

Chapter 3 provides the principled and environmental policy structure supporting the development of the proposed MCTT. It analyses the main existing principles of environmental regulation as they exist in international law. Based on that information, it identifies and ranks them as core, secondary and general principles of environmental taxation. Chapter 3 places the proposed MCTT within the UN Environmental Framework and explains how the language of the UNFCCC would allow the admission of a treaty that would work in parallel with the Kyoto Protocol. Since no constraints are made with respect to the methodology with which to support the environmental objective pursued via the UNFCCC, it is argued that this parallel treaty could be a tax treaty. The chapter demonstrates that this argument has been reinforced with the introduction of the Paris Agreement, the objective of which is to stimulate the use of non-market approaches to curb climate change.

Chapter 4 is the business chapter, and as such, it describes the key features of the fossil fuel industry. It separates the production chain into upstream, midstream and downstream operations and describes how the different fossil fuels covered in the book are traded internationally. Chapter 4 was drafted as an independent chapter. It provides further insight into the oil, gas and coal production chains and explains some of the scientific language used in this book, as well as the properties of the emissions deriving from the combustion of fossil fuels. As a result, it may be consulted at any stage of the book.

Chapter 5 contains a country survey outlining the main policy features of the countries currently applying carbon or energy taxes, as well as past propositions for a carbon tax or price. It contains an overview of the carbon tax rates currently applied by the surveyed countries. The information contained in this chapter will be important to instruct the methodology applied in chapters 6 and 7 in identifying the tax base, tax rate and taxpayer of the proposed multilateral carbon tax.

Chapter 6 identifies the object of tax, the point of taxation and the taxpayer according to the classification provided in the previous chapters. It also identifies how countries are to administer a reverse charge mechanism in order to claim back the tax paid for carbonic substances not ultimately submitted to a combustion process.

Chapter 7 covers the tax base and the methodology that countries are to use in identifying the in rem price of carbon. It is suggested that countries should average out the price applied in order to reach a political compromise on the carbon price. The carbon price would be progressively increased over the years. Regardless of the methodology applied, it is suggested that the carbon price should be significant. A significant carbon price is one that would keep the carbon concentration levels in the atmosphere at 550 parts per million or limit the average temperature increase to below 2 degrees Celsius above pre-industrial level. This chapter also discusses a separate range of tax rates to be applied by developing countries.

Chapter 8 examines the fourth prong of the four-prong test, and as such, it discusses whether the carbon tax as proposed in the book would be admissible within the WTO framework. It discusses the admissibility of the proposed carbon tax from the angle of the existing case law and from the perspective of the WTO's institutional framework to deal with environmental issues. It also discusses under what circumstances a border tax adjustment would be admissible under the WTO system. The last part of the chapter explores how a carbon tax measure could be more easily accepted if a country's inability to impose a price on the use of environmental goods was interpreted to be a subsidy under the WTO framework.

Chapter 9 discusses administrative issues concerning the proposed treaty. It discusses why the WTO would be the international organization most suitable to administer the proposed tax treaty and how the proposed multilateral treaty would fit into the WTO and UN combined frameworks.

Chapter 10 concludes all of the arguments presented in this book and suggests the language of the model carbon tax treaty. It is understood that the model might not be readily accepted by the nations interested in supporting an environmental tax as a policy option, but it is intended as a starting point from which negotiations could begin. Since the model carbon tax treaty is the object of this book, the model is simply the product of the decisions made in chapters 2-9.

Contact

IBFD Head Office
Rietlandpark 301
1019 DW Amsterdam
P.O. Box 20237
1000 HE Amsterdam
The Netherlands

Tel.: +31-20-554 0100 (GMT+1)

Email: info@ibfd.org

Web: www.ibfd.org



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