

Diplomacy Dialogue

Greening

WTO Agreements

to **stop**

Climate Warming

Raymond Saner

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Abstract

Radical new approaches are urgently needed to reverse climate warming and to prevent the world from committing “ecocide” through environmental destruction. The radical new solutions proposed in this policy study go beyond the incremental change of current policy practice and instead suggest the need for a discontinuous change as the only means of halting the pervasive “tinkering along” approach of mainstream policy making which have not been able to bring about a halt to climate warming. This policy study assesses the various attempts of state and non-state actors to cope with climate change and argues that a radically new approach is needed within the WTO agreements to generate solutions that have sufficient weight and treaty power to bring about a new and credible approach towards halting and reversing of climate warming.

Building on previous analysis and recommendations¹, this policy study discusses the interface between multilateral agreements on trade and on climate change and suggests that the WTO is the only multilateral institution which can effectively generate legal constraints and political will to stop climate warming. This policy study proposes an intra-regime solution within the WTO agreement in order to elicit the green investments and green production needed to successfully implement climate change mitigation and adaptation.

The following questions are addressed by this policy study: Which are the international economic governance options to effectively stop climate warming? Which are the main disciplines within the WTO Agreements addressing environment, trade, investment and intellectual property? What can be changed within the WTO Agreements to foster a green economy in developed and developing countries? What does the WTO case law say about disputes involving environment, trade, and investment?

Key words: trade, investment, climate change, mutual supportiveness, energy, WTO, TRIMS, TRIPS, UNFCCC

¹ Think “out of the box” solutions: see Saner (2011) “International governance options to strengthen WTO and UNFCCC”, CSEND Policy Brief, available from http://www.diplomacydialogue.org/component/docman/doc_download/109-20110611-international-governance-options-to-strengthen-wto-and-unfccc.pdf. See also Arquit, Gage & Saner (2011) and Arquit & Saner (2005) on CDM.

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Chapter 1

Introduction: A cross-regime approach based on the principle of mutual supportiveness

Main message:

A WTO-UNFCCC cross-regime agreement does not exist and is not likely to emerge in the near future to stop climate warming. This policy paper advises that negotiation space should be used within WTO to make the urgent policy decisions to stop climate warming. The principle of mutual supportiveness is a concept that can support this approach.

Climate change can be considered a market failure in the sense that market activity does not take into account externalities (environmental costs) and hence drives global growth in anthropogenic greenhouse gas emissions, increases atmospheric concentrations and enhances the greenhouse effect, with adverse consequences for biological, physical and human systems and net costs into the future (IPCC, 2007; 17).

The atmospheric trends are clear: increased rainfall, a relentless march towards warmer temperatures, higher level of oceans, and ever-more-intense droughts. It is imperative to think of alternative solutions to deal with this growing global environmental disruption. According to PricewaterhouseCoopers²,

“ a ‘business as usual’ approach based on our GDP growth projections could see global warming of 6°C or more in the long run, while the UN’s 2°C objective seems increasingly out of reach given the lack of progress on decarbonisation since 2000.

A more plausible and affordable ‘gradual greening’ scenario might see decarbonisation at a rate sufficient to broadly offset the effects on emissions of economic growth, so leaving total global carbon emissions in 2050 at similar levels to today. But even this scenario would still be consistent with 4 degrees of global warming in the long run – it may already be too late for 2 degrees as our latest Low Carbon Economy Index report discusses in more detail.” (p.15)

² PricewaterhouseCoopers (2013), “World in 2050 - The BRICs and beyond: prospects, challenges and opportunities”, PwC Economics, http://www.pwc.com/en_GX/qx/world-2050/assets/pwc-world-in-2050-report-january-2013.pdf

Table 1: PwC's three possible scenarios for global energy use and carbon emissions

Average global growth rates (% per annum: 2012-50)	Business as usual scenario	Gradual greening scenario	Green growth scenario
1. GDP	3.1	3.1	3.1
2. Energy intensity	-0.8	-1.4	-2.5
3. Primary energy consumption (= 1 +2)	2.3	1.7	0.6
4. Greener fuel mix effect	0.0	-1.2	-2.0
5. Carbon emissions without CCS (= 3+4)	2.3	0.5	-1.4
6. Carbon capture and storage (CCS) effect	0.0	-0.3	-0.6
7. Carbon emissions with CCS (=5+6)	2.3	0.2	-2.0
8. Implied decarbonisation rate (=1-7)	0.8	2.9	5.1
Atmospheric concentration of greenhouse gases (CO ₂ e parts per million, projected in 2100)	c.1200 ppm	c.700 ppm	c.450 ppm
Long term temperature rise (degrees centigrade)	c.6°C	c. 4°C	c. 2°C

Source: PricewaterhouseCoopers (2013)

Furthermore, global carbon dioxide in the atmosphere has recently passed a milestone level. At the beginning of May, climate warming greenhouse gases reached 400 parts per million for the first time in human history. The last time when so much greenhouse gas was in the air was when the Arctic was ice-free, savannahs spread across the Sahara desert and sea level was up to 40 metres higher than today.³

New original approaches are urgently needed to reverse this trend and to prevent the world from committing "ecocide" through environmental destruction (Ecocide Act which was used as the basis for a mock trial in the UK Supreme Court on 30 September 2011).⁴ Following Higgins (2012), climate change is a symptom which, without addressing its source, will turn worse and increasingly debilitating. According to this author,

"[a]ll existing proposals fail to disrupt the very system that is destroying our world. Of those that have been put on the table, none are enforceable, none are capable of delivering on time and none

have proven to be turnkeys. Not one of the proposals will effectively halt dangerous industrial activity: the replacement to the Kyoto Protocol (proposed to come into force in 2020) is voluntary; a Green Fund with no funds and the \$100 billion promise will not be provided by the developed countries; REDD (Reducing Emissions from Deforestation and Forest Degradation) has failed to safeguard the people and funding has been postponed until the next decade.

2020, it's too late to wait: a very different route can be taken instead. What is needed is a disruptor to our current trajectory and a law to set a framework for intervention. To rely on existing policies is a miscarriage of justice.

This is a story with two possible endings: one is fertile and abundant with life, the other is arid and speaks of death. We have a choice: to make the leap to the new and leave the old ways behind as distant memories, or follow the current route into the ecocide of the earth. By setting out the legal tools we can use, our choice can be life-affirming and can be a decision which will ensure a positive outlook for many beings. Let's

³ The Guardian (2013), "Global carbon dioxide in atmosphere passes milestone level", 10th May, <http://www.guardian.co.uk/environment/2013/may/10/carbon-dioxide-highest-level-greenhouse-gas>

⁴ Higgins, P. (2012), *Earth is our Business changing the rules of the game*, Shephard-Walayn Publishers Ltd.: London.

face the challenge head on together”
(p.XIV)

In view of the life endangering risks of climate change, researchers and scholars highly recommended that low carbon production and investment at national and global levels is urgently needed.⁵

Many environmental problems are related to the increased scale of global economic activity. On the one hand, the absence of effective environmental policies, can contribute to environmental problems. On the other hand, trade can have positive effects by improving resource allocation, promoting economic growth and increasing overall welfare. This is a complex issue. Following Love and Lattimore (2009),

“[p]roducing goods for international markets and getting them to those markets obviously affect the environment. And just as obviously, some of the impacts are negative. So the question is not whether trade damages the environment. It does, as do many other human activities. The question is whether a more liberal trade regime would make this damage worse or improve the situation.

The relationships between the environment and trade, and the environment and economic globalisation more generally, are complex. Although trade liberalisation combined with effective environmental management can promote the more efficient use of natural resources and the diffusion of cleaner technologies, other features of globalisation counteract these trends, such as the growing scale of production worldwide. So any environmental benefits are not automatic. Robust environmental policies and institutional

⁵ See Intergovernmental Panel on Climate Change, Geneva. IPCC (Intergovernmental Panel on Climate Change), 2007: *Climate Change 2007 – Impacts, Adaptation and Vulnerability*. New York: Cambridge University Press, 976 pp. See also IPCC’s Assessment Reports and Technical Reports available from http://www.ipcc.ch/publications_and_data/publications_and_data.shtml#1

frameworks are needed at the local, national, regional and global levels. Generally speaking, problems that are contained behind national borders should be solved using national policies.”⁶

Concrete aspects of this complex relation between trade and environment were addressed at the 2012 Rio+20 United Nations Conference on Sustainable Development. A 10-year Framework of Programmes on sustainable consumption and production⁷ was proposed as a major tool for accelerating the change of unsustainable patterns of consumption and production. This new approach should go beyond Gross Domestic Product (GDP) and focus on broader measures of progress including social and environmental impacts. Sustainable development integrates three interconnected dimensions (economic, social and environmental) in a balanced way. In order to do so, structural economic transformation is needed in order to support the transition into a green economy. According to the Council of the European Union, this framework should

“[c]onsist of a single set of clear goals, which are ambitious, evidence-based, achievable, action-oriented, limited in number and easy to communicate, with measurable targets and indicators which are both qualitative and quantitative and which should be reviewed and monitored to ensure transparency and accountability”.⁸

A set of clear and measurable guidelines can certainly be a major tool for accelerating the

⁶ Love, P. and Lattimore, R. (2009), “International Trade: Fee, Fair and Open?”, OECD Insights: International Trade, <http://www.oecd-library.org/docserver/download/0109121e.pdf?expires=1372433893&id=id&accname=quest&checksum=34BD80611B34ED874E27BAA9B695CC45>, p. 120.

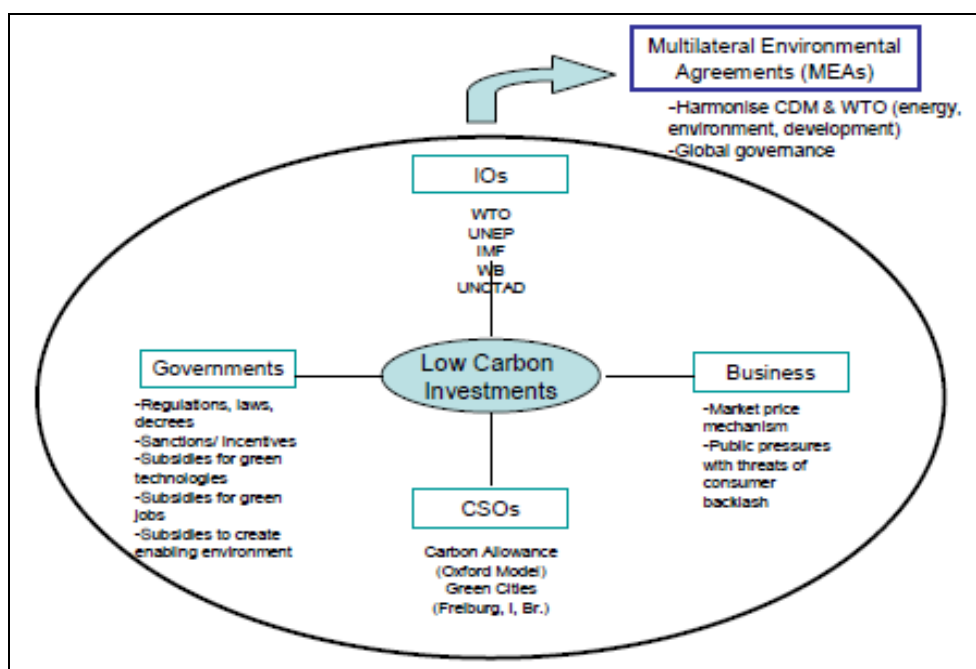
⁷ Rio+20 United Nations Conference on Sustainable Development (2012), “A 10-year framework of programmes on sustainable consumption and production patterns”, http://www.unep.org/rio20/portals/24180/Docs/a-conf.216-5_english.pdf

⁸ Council of the European Union (2013), “The Overarching Post 2015 Agenda”, Council Conclusions, 25 June, http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/EN/foraff/137606.pdf

change of unsustainable patterns of consumption and production. In particular, low carbon investment can be achieved through incentives and sanctions which act as drivers and determinants influencing investors and investment flows towards low carbon

investment. As depicted in the figure below, low carbon investment can be achieved at national levels through green government policies, civil society pressures for sustainable growth and environmentally friendly business decisions by commercial actors.

Figure 1: Mapping of actors and regimes



Source: Saner, Raymond (2011) "International governance options to strengthen WTO and UNFCCC", CSEND Policy Brief, http://www.diplomacydialogue.org/component/docman/doc_download/109-20110611-international-governance-options-to-strengthen-wto-and-unfcccpdf

As stated by Arquit, Gage and Saner (2011: 3), the following options can ensure competitiveness and carbon-reduction if applied in a coherent and complementary manner:

"[so]me of the most powerful tools available to governments to promote the uptake of innovative climate technologies are related to removing international trade and investment barriers, such as: exempting clean energy processes and products from export control regimes (e.g., dual use, end user prohibitions); innovative approaches to protect cleantech intellectual property, without restricting legitimate access; using transparent and

*non-discriminatory government procurement practices that provide predictable markets for environmental goods and services; and harmonizing international standards and conformity assessment procedures. Effective technology transfer also requires absorptive capacity and attention to the linkages between TNCs and local companies, particularly small- and medium enterprises (SMEs)."*⁹

⁹ Anne Arquit, Jonathan Gage, Raymond Saner, Levers to Enhance TNC Contributions to Low-Carbon Development – Drivers, Determinants and Policy Implications ; "Background papers/Special studies" at <http://www.uncsd2012.org/content/documents/Levers%20to>

At the international level, governmental regimes currently in place such as the WTO and the UNFCCC provide means to address the issue of low-carbon production. These means, however, are not yet made full of as explained in the subsequent sections.

The aim of the **UNFCCC** is to prevent dangerous anthropogenic interference with the climate system. Article 2 of the Convention establishes the objective of achieving

“stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the

climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.”¹⁰

The **Kyoto Protocol**, established in 1997, is an international agreement which “operationalizes” the Convention. The Protocol *commits* countries to stabilize greenhouse gas emissions based on the principles of the Convention, while the Convention only *encourages* countries to do so.¹¹ The status of the parties to the Kyoto Protocol is identified in the box below.

Box 1: Kyoto Protocol participation map



Legend:

1. UNFCCC (2011), Kyoto Protocol, UNFCCC, retrieved 9 December 2011
2. StarTribune (2012), Canada formally pulls out of Kyoto Protocol on climate change Retrieved 4 May 2012.
3. United Nations- Doha Climate Gateway CMP8 Decisions Retrieved 9 Dec 2012.
4. King, D., et al. (2011), "Copenhagen and Cancun", *International climate change negotiations: Key lessons and next steps*, Oxford, UK: Smith School of Enterprise and the Environment, University of Oxford, p. 12
5. UNEP (2012), The Emissions Gap Report 2012, Nairobi, Kenya: UNEP, pp. 14–18
6. UNFCCC website "Status of ratification". Retrieved 5 June 2012.

Source: https://en.wikipedia.org/wiki/Kyoto_Protocol

10

http://unfccc.int/essential_background/convention/background/items/1353.php

11

[%20Enhance%20TNC%20Contributions%20to%20Low%20Carbon%20Development.pdf](#)

http://unfccc.int/essential_background/kyoto_protocol/items/6034.php

Finally, the **WTO** through its goals, rules, institutions and agenda, also provides an important means of advancing international environmental goals. The WTO's founding agreement recognizes sustainable development as a central principle, and it is an objective running through all subjects in current Doha negotiations. The Agreement says WTO members recognize that

“their relations in the field of trade and economic endeavour should be conducted with a view to raising standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, and expanding the production of and trade in goods and services, while allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking 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.”¹²

Although the WTO agreements contain references to environment as an essential component of sustainable development, those references are limited and the language is rather general and exhortatory in nature. It is worth mentioning that at the current stage, the WTO agreements do not offer a language to *specifically guide* WTO Members towards low-carbon production. According to some delegates, WTO rules are neutral towards sustainable development in the sense that they refer to it as a desired objective but as mentioned above, the references are general. WTO rules just allow environment and trade to coexist but do not *specifically* promote sustainable development.

Hence, both frameworks provide some general references pertaining to sustainable development and to fighting climate change. A cross-regime agreement or cooperation between trade governance (WTO) and climate change (UNFCCC) could be a key **driver and determinant to ensure low-carbon investment**. As will be highlighted later, proposals by different organizations address the issues of green investment but from different cross-regime perspectives.

Box 2: Main trade and climate change linkages

- 1) Climate change physically affects trade (in terms of patterns and volume);
- 2) Trade affects climate change, both directly and indirectly;
- 3) Climate change policies affect trade;
- 4) Trade policy is a mechanism to address climate change and promotion of low-carbon growth.

Source: Teehankee, Jegou, Rodrigues (2012), “Multilateral Negotiations at the Intersection of Trade and Climate Change”, ICTSD Issue Paper no.2, page 7, <http://ictsd.org/downloads/2012/06/multilateral-negotiations-at-the-intersection-of-trade-and-climate-change.pdf>

Trade, investment and climate change are interconnected, as shown in the box above. Trade and investment policies affect climate change and vice-versa at the national and international level. The principle of mutual supportiveness and the concept of inter-ministerial coordination and consultation in trade policy making could be used to ensure coherent and complementary trade, investment and climate change policies to ensure that green investments will complement climate change mitigation and adaptation efforts. In particular, as identified in the box below, developing countries perceive a number of risks related to trade and green economy. These are mainly related to protectionism, subsidies, market access, technical standards and conditionalities used by developed economies to keep out exports from developing countries.

Box 3: Green economy, trade and perceived risks by developing countries

- Using environmental measures for trade protection;
- Gaining market access through the guise of environmental reasons;
- Facing production that is subsidized in the industrialized world without being able to impose corrective measures;
- Limiting the policy space that developing countries have to promote their own green economy sectors;
- Facing technical standards that developing country exporters cannot meet;
- Imposing new conditionality on developing countries for aid, loans, and debt rescheduling or debt relief.

Source: Teehankee, Jegou, Rodrigues (2012), "Multilateral Negotiations at the Intersection of Trade and Climate Change", ICTSD Issue Paper no.2, page 137, <http://ictsd.org/downloads/2012/06/multilateral-negotiations-at-the-intersection-of-trade-and-climate-change.pdf>

Principle of Mutual supportiveness

Attempting to achieve low carbon investment at international levels through regulatory measures (capping of carbon emissions and of other greenhouse gas emission) is the aim of multilateral agreements and conventions such as the Multilateral Environmental Agreements (MEAs). On the other hand, the multilateral and plurilateral trade agreements favour progressive liberalization of markets and de-emphasizes regulatory measures by national governments. The tension between the MEAs and the trade agreements (WTO, RTAs, FTAs, BITs) hinders the goal of achieving low carbon investment and low carbon economic activities. The principle of **mutual supportiveness** suggests that each international regime should take into account the scope and legal ramification of other agreements.

The principle of mutual supportiveness is not a new epiphenomenon. The 2006 Report of the International Law Commission (ILC) on "Fragmentation of International Law: Difficulties arising from the Diversification and Expansion of

International Law"¹³ referred to mutual supportiveness only in two instances. However, this principle has emerged as a means to deal with the phenomenon of "fragmentation" of international law. Mutual supportiveness developed in the context of the relationship between trade agreements and multilateral environment agreements.¹⁴ Following Mbengue & Boisson de Chazournes (2011), Article 31.1 (General rule of interpretation) of the Vienna Convention on the Law of Treaties focuses on the "internal context" (rules and principles that parties to a treaty are bound to implement in light of a given treaty regime) of treaties and constitutes a pathway for mutual supportiveness.

Mutual supportiveness has its origin in a document adopted by the 1992 UN Conference on Environment and Development which outlines that

*"[t]he international economy should provide a supportive international climate for achieving environment and development goals by . . . making trade and environment mutually supportive."*¹⁵

This document calls the states to

"promote and support policies, domestic and international, that make economic growth and environmental protection mutually supportive".¹⁶

References to mutual supportiveness can be found in the text of different international agreements and other legal instruments. As suggested by Pavoni (2010)¹⁷, although they have the character of political statements, they

¹³

http://untreaty.un.org/ilc/documentation/english/a_cn4_l682.pdf

¹⁴ M. Mbengue & L. Boisson de Chazournes (2011), "A 'Footnote as a Principle'. Mutual Supportiveness and Its Relevance in an Era of Fragmentation", *Liber Amicorum Rüdiger Wolfrum*, Springer, 2011.

¹⁵ Agenda 21, paragraph 2.3(b), available at:

www.un.org/esa/dsd/agenda21/res_agenda21_00.shtml

¹⁶ *Ibid*, paragraph. 2.9(d).

¹⁷ Pavoni (2010), "Mutual Supportiveness as a Principle of Interpretation and Law-Making: A Watershed for the 'WTO-and-Competing Regimes' Debate?", *The European Journal of International Law*, Vol. 21 no. 3,

<http://www.ejil.org/pdfs/21/3/2072.pdf>

should not be dismissed as for their normative significance. According to this author (2010; 1),

“mutual supportiveness seems to be characterized by two remarkable legal dimensions. The first is its interpretative dimension, which serves the purpose of disqualifying solutions to tensions between competing regimes involving the application of conflict rules. The second is the law-making dimension of mutual supportiveness which comes into play when efforts at reconciling competing rules have unsuccessfully been exhausted. This dimension implies a duty to pursue good faith negotiations aimed at the conclusion of law-making instruments, including treaty amendments, which clarify the relationship between the competing regimes at hand.”

Mutual supportiveness has also been applied at the regional level by an Arbitral Tribunal established under the NAFTA investment chapter.¹⁸ As pointed out by Pavoni (2010; 662) the case

“concerned a Canadian ban on the export of polychlorinated biphenyl (PCB) wastes allegedly enacted pursuant to various international environmental standards and rules. Thus, the case squarely involved competing economic, environmental, and health concerns. The Tribunal engaged in an extensive review of the pertinent environmental regimes, which demonstrated that MS was chief among the principles governing the interface of trade, investment, and environmental obligations. MS dictated that ‘environmental protection and economic development can and should be mutually supportive’... Most importantly, the Tribunal was guided by MS in devising a harmonious and consistent interpretive balance of the competing obligations at stake, which it found in the

requirement to adopt the ‘least-investment restrictive environmental measure’ reasonably available to states.¹⁹”

In addition, the 2008 FTA between Canada and the European Free Trade Association (EFTA) recognizes in its preamble “the need for mutually supportive trade and environment policies in order to achieve the objective of sustainable development”. Furthermore, Article 117.12 of the 2004 Central America-Dominican Republic-United States Free Trade Agreement (CAFTA) also makes specific reference to the principle of mutual supportiveness, establishing that

“... the Parties shall continue to seek means to enhance the mutual supportiveness of multilateral environmental agreements to which they are all party and trade agreements to which they are all party.”²⁰

Mutual supportiveness is included in some legal international instruments as a principle. These different instruments are identified below.

Sustainable development is featured in the first sentence of the preamble to the Marrakech Agreement (1994)²¹, setting the tone for this founding agreement of the WTO:

“Recognizing that their [Members] relations in the field of trade and economic endeavour should be conducted with a view to raising standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, and expanding the production of and trade in goods and services, while allowing for the optimal use of the world’s resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment

¹⁸ Chapter 11 of the North American Free Trade Agreement, 17 Dec. 1992, 32 ILM (1993) 289 and 605.

¹⁹ SD Myers, supra note 56, at para. 221; see also paras 195, 255, and 298. The Tribunal found that Canada had not fulfilled that requirement.

²⁰ Mbengue & Boisson de Chazournes (2011), op. cit.

²¹ http://www.wto.org/english/docs_e/legal_e/04-wto_e.htm

and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development". (Underlining added by authors)

The WTO 1994 Decision on Trade and Environment²² mentions that:

"Considering that there should not be, nor need be, any policy contradiction between upholding and safeguarding an open, non-discriminatory and equitable multilateral trading system on the one hand, and acting for the protection of the environment, and the promotion of sustainable development on the other..."

The Doha Declaration²³ in 2001 in its paragraph 6 states:

"It is the potential impact of economic growth and poverty alleviation that makes trade a powerful ally of sustainable development. The multilateral trading system is an important tool to carry forward international efforts aimed at achieving this goal. The purpose of trade liberalisation and the WTO's key principle of non-discrimination is a more efficient allocation of resources, which should be positive for the environment."
(Underlining added by authors)

In addition, paragraph 31(i) addresses the institutional linkages between the WTO and other MEAs and calls for more examination of the relationship between the MEAs and the WTO, with *"a view toward enhancing mutual supportiveness..."* (Underlining added by authors). And last but not least, paragraph 51 of the Doha Declaration refers to the Committee on Trade and Development and the Committee on Trade and Environment as the forum to identify

and debate development issues related to sustainable development.

One challenge facing the mutual supportiveness approach is to assess which of the goals stated in different regimes is more important and urgent for sustainable development (e.g. climate change). Following Lydgate (2012),

*"[w]hile "mutual supportiveness" suggests that sustainable development's environmental and social goals are a side effect of trade liberalisation, "balancing" involves weighing these different goals, and prompts the difficult question of which are most important, and who is empowered to decide."*²⁴

Pascal Lamy, current Director General of the WTO has also called for mutual supportiveness of different elements of the global governance structure. The ideas presented below are part of Mr. Lamy's speech delivered at the Graduate Institute of International Studies in Geneva on 2006.²⁵

"Sustainable development should be the cornerstone of our approach to globalization and to the global governance architecture that we create. If I have come to this forum, it is to deliver a message: the WTO stands ready to do its part..."

"First, WTO Members are entitled to determine the level of protection for the environment, health, morality if they wish, even if such national standards are above existing international standards. Second, in WTO, exceptions referring to such non-trade concerns are not to be interpreted narrowly; exceptions should be interpreted according to their ordinary meaning of the non-trade policy invoked. In this

²² http://www.wto.org/english/tratop_e/envir_e/issu5_e.htm

²³

http://www.wto.org/english/thewto_e/minist_e/min01_e/mind_ecl_e.htm

²⁴ Lydgate (2012), "Sustainable development in the WTO: from mutual supportiveness to balancing", *World Trade Review*, October, Vol. 11 Issue 4, p. 1.

²⁵ Pascal Lamy, "The WTO in the Archipelago of Global Governance," Speech at the Institute of International Studies, Geneva, 14 March 2006, http://www.wto.org/english/news_e/sppl_e/sppl20_e.htm.

context our Appellate Body has insisted that exceptions cannot be interpreted and applied so narrowly that they have no relevant or effective application. There must always be a balance between WTO market access obligations and the rights of government to favour policies other than trade.”

Finally, the recently appointed new **WTO Director General, Roberto Carvalho de Azevêdo** has also highlighted the importance of the intersection between climate change, energy access and security. In his view,

“If Members choose not to discuss and negotiate disciplines about them - and this is an entirely legitimate choice - these issues will be inevitably brought to the dispute settlement system. Some already have.

We very frequently hear that new rules are the solution to new challenges. It may be so in some cases, but in several others the disciplines already in place regulate a new technical, ethical, or social reality aptly. Think of the decision by the Appellate Body in the US Shrimp-Turtle dispute to consider the expression “exhaustible natural resources” in paragraph (g) of Article XX of the GATT 1994 as encompassing sea turtles. It is hard to argue that negotiators of the conservational exception text had turtles in mind, or other environmental considerations present in today’s world back in 1947. The legal text proved to be flexible enough in this and in many other situations.

I am not arguing for passivity with regard to negotiating new rules, but rather pointing out that Members will not always decide to opt for new rules as opposed to innovative approaches to old ones. In any event, it is up for Members to decide what topics they want to talk about. The Director-General does not set the agenda, but rather has the

important function of facilitating the discussions among the Members.

That said, one cannot ignore that some new subjects are not going away anytime soon and it will be only natural if Members decide to negotiate rules about their relationship with trade. These subjects are hard-wired in deep-rooted trends, such as consumption patterns, demography, technological limitations, and opportunities. Climate change is one such issue. Finance and energy are other obvious examples.”²⁶

Adequate domestic policies are critical to create mutual supportiveness; current WTO Director General, Pascal Lamy, has stated the need for the WTO to support these domestic policies (Lydgate 2012). These domestic policies to address the new challenges like climate change are interconnected and need to be tackled from a multi-disciplinary perspective (cross-sectors). Governments, at the national level, need inputs from different ministries (involving different subjects) in order to develop efficient negotiating strategies. For instance, negotiations at WTO and UNFCCC are both at an impasse putting international cooperation in key sectors of world development at risk. International governance options are urgently needed to strengthen multilateral negotiations at the WTO and UNFCCC to avoid full deadlock and possible major trade and environmental conflicts.²⁷

²⁶ <http://ictsd.org/publications/latest-pubs/dg2013/roberto-azevedo/>

²⁷ For “out of the box thinking” solutions see Saner (2011) “International governance options to strengthen WTO and UNFCCC”, CSEND Policy Brief, available from <http://www.diplomacydialogue.org/component/docman/doc/download/109-20110611-international-governance-options-to-strengthen-wto-and-unfccc.pdf>

Chapter 2

International agreements related to climate change

Main message:

there are international and regional agreements and organizations dealing with trade and environment. These agreements and organizations are working in isolation. Constructive interaction between MEAs and related IOs is scarce and not substantive enough to stop climate warming.

Agreements and International Organizations related to either trade or environment:

Multilateral Environmental Agreements (MEAs).

They cover issues like atmosphere, living matter, marine life, desertification, ecosystem protection, refusal of dangerous substances and marine contamination. There are currently over 250 MEAs dealing with various environmental issues which are currently in force and about 20 of them include provisions that can affect trade (containing, for instance, measures that prohibit trade in certain species or products, or that allow countries to restrict trade in certain circumstances^{9,28} The environmental governance structure defined by the Rio and Johannesburg Summits is also represented by **UNEP**.

- The **United Nations Framework Convention on Climate Change (UNFCCC)**, an international treaty to consider what can be done to reduce global warming and to cope with temperature increases.²⁹ It incorporates the Kyoto Protocol and the Montreal Protocol on Substances that deplete the ozone layer.
- Further sources are:
 - Convention on Biological Diversity (CDB) (1992-1993) which is linked to the Cartagena Protocol on biodiversity

- United Nations Convention to Combat Desertification (UNCCD) (1994-1996)
- Ramsar Convention on Wetlands of International Importance (1971-1975)
- UNESCO World Heritage Convention (1972-1975)
- Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) (1973-1975)
- Bonn Convention on the Conservation of Migratory Species (1979-1983)
- Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) (1992-1996)
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989-1992)
- Rotterdam Convention on the Prior Informed Consent Procedures for Certain Hazardous Chemicals and Pesticides in International Trade
- Stockholm Convention on Persistent Organic Pollutants (COP) (2001-2004)

Multilateral and Plurilateral Trade Agreements (MTAs).

Environment and Trade related negotiations within the WTO context pertain to environmental goods and services, energy (goods and services) and **WTO** rules that include provisions for protecting the environment

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http://www.wto.org/english/tratop_e/envir_e/envir_neg_mea_e.htm

²⁹ http://unfccc.int/essential_background/items/2877.php

periodically arise in the CTE and TBT Committees).³⁰ Also the DSB jurisprudence: “[u]nder the GATT (1948–94), six panel proceedings involving an examination of environmental measures or human health-related measures under GATT Article 20 (i.e. XX) were completed. Of the six reports, three were not adopted. In 1995, the WTO’s dispute settlement procedure took over from GATT. Since then, three such proceedings have been completed.”³¹

Regional Trade Agreements that incorporate environmental chapters or provisions:³²

- **Regional Trade Agreements (RTAs) and Bilateral Free Trade Agreements (FTAs).** Some RTAs strive for harmonisation of environmental policies, for example, the MERCOSUR Framework Agreement for Environment, where Parties undertake to cooperate on the harmonisation of environmental standards. The obligation for Parties to enforce their own environmental laws is included mainly in agreements involving the United States and Canada. Other agreements, such as those recently negotiated by New Zealand, include references to the inappropriateness of lowering environmental standards.³³
- **Bilateral Investment Treaties (BITs).** Some BITs also include environmental references. Some countries decided to include environmental concerns in BIT preamble clauses. This is the case for China, Finland, Germany, Japan, Korea, the Netherlands, Sweden, Switzerland, and the US. Furthermore, a growing number of agreements include clauses in the body of the treaty that seek to reserve policy space to regulate environmental matters. This is

the case of the China-Singapore BIT (1985), or the Switzerland-El Salvador BIT (1994).³⁴

Solutions outside the WTO framework

The proliferation of global value chains means that trade-related measures taken in pursuit of sustainable development can no longer be seen in terms of narrow, isolated effects. This is all the more important if the multilateral trading system were to deal with global challenges such as low carbon, resource efficient and socially inclusive development which are not addressed under existing rules.

There is a need to bring back to the discussions at multilateral level the issues of competition and investment which are being currently included in BITs and FTAs without a coherent link to the multilateral framework of the WTO.

Trade agreements and negotiations are also conducted outside the WTO context. For instance, rules pertaining to maritime shipping are negotiated within the context of the International Maritime Organization (IMO). Fuel use in shipping is a major source of GHG. Members of the IMO are currently discussing how they could reduce CO2 emissions. Some members want stringent rules which would apply to all ships whether they are owned by a shipping country located in a developing country or developed country. Members are also discussing solutions entailing emissions trading, use of a bunker levy or trading energy efficient credits based on efficiency performance of ships which could be an interesting example for other sectors to follow who are outside the WTO context.

Free trade agreements (FTAs) and Regional Trade Agreements (RTAs) are supposed to be complementary to WTO rules. However, the proliferation of FTAs has made it difficult to ensure that they do not contradict the respective members’ WTO obligations. Several of the FTAs

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http://www.wto.org/english/tratop_e/envir_e/climate_challenge_e.htm

³¹ http://www.wto.org/english/tratop_e/envir_e/edis00_e.htm

³² <http://www.oecd.org/env/38599709.pdf>

³³ See sub-section on Environmental provisions in regional agreements.

³⁴ Gordon, K. and J. Pohl (2011), “Environmental Concerns in International Investment Agreements: a survey”, OECD Working Papers on International Investment, No. 2011/1, OECD Investment Division, <http://www.oecd.org/daf/inv/investment-policy/48083618.pdf>, pp. 14, 16

involving the US and the EU include provisions regarding the environment and climate change. In other words, they go beyond what has been so far agreed within the WTO. The same is true for Bilateral Investment Treaties (BITs) which are most of the time confidential and do not reveal the extent to which FDI is put into relation with low carbon investment and for instance to carbon reducing technology IPs. There is a need for closer scrutiny of all these various trade agreements (FTAs, RTAs, BITs). UNCTAD has many years of experience in researching the field of investment and hence could easily add low carbon investment to its portfolio.

Like the Montreal MEA, countries could also agree on regulating full inclusion of greenhouse gas in agricultural production thereby making subsidized low priced agricultural products based on industrial farming more transparent in regard to their externalities giving agricultural producers in LDCs the opportunity to produce agricultural products based on green agricultural principles (limiting use of fertilizers, pesticide, unprocessed animal waste, etc.).

International organizations focusing on policy coordination related to trade, investment and environment are:³⁵

- **UNEP** (United Nations Environment Programme).³⁶ Its mission is to provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations. Located within the United Nations Environment Programme's Division of Technology, Industry and Economics, the Economics and Trade Branch (UNEP-ETB) seeks to conserve the environment, reduce poverty, and promote sustainable development by enhancing the capacity of governments, businesses, and civil society to integrate environmental considerations into economic, trade, and financial policies

and practices in accordance with the partnership and integrated policy-making approaches of sustainable development.³⁷

- **UNDP** (United Nations Development Programme).³⁸ As the specialized agency of the United Nations focusing on Development, UNDP has a mandate to support countries in their development path, and to coordinate the UN System at the country level. In this capacity, the UN Secretary General requested UNDP to be the Millennium Development Goals (MDGs)³⁹ Scorekeeper, in addition to its programmatic work for MDG achievement. The Road map towards the implementation of the United Nations Millennium Declaration Annex – para. 4) states that UNDP *will coordinate the reporting on progress towards the Millennium Development Goals at the country level.* Overall, UNDP works in four main areas: 1) Poverty Reduction & Achieving the Millennium Development Goals (MDGs); 2) Democratic Governance; 3) Crisis Prevention & Recovery; and 4) Environment & Sustainable Development.
- **OECD** (Organization for Economic Cooperation and Development).⁴⁰ The mission of the OECD is to promote policies that will improve the economic and social well-being of people around the world. It provides a forum in which governments can work together to share experiences and seek solutions to common problems. It works with governments to understand what drives economic, social and environmental change. Since its establishment in 1971, the Environment Policy Committee has played a key role as a pathfinder for effective and economically efficient responses to pressing environmental challenges – from polluted air to municipal waste, from scarce water to the

³⁵ Different cross-regime approaches suggested by some of these organizations will be analyzed later in this policy brief.

³⁶ <http://www.unep.org/>

³⁷ <http://www.unep.ch/etb/about/index.php>

³⁸

http://www.undp.org/content/undp/en/home/mdgoverview/mdg_goals/progress/

³⁹ <http://www.un.org/millenniumgoals/>

⁴⁰ <http://www.oecd.org/about/>

ozone depletion, and from biodiversity loss to climate change.⁴¹

- **UNCTAD** (United Nations Conference on Trade and Development).⁴² UNCTAD promotes the development-friendly integration of developing countries into the world economy. It has progressively evolved into an authoritative knowledge-based institution whose work aims to help shape current policy debates and thinking on development, with a particular focus on ensuring that domestic policies and international action are mutually supportive in bringing about sustainable development. The organization works to fulfil this mandate by carrying out three key functions: 1) a forum for intergovernmental deliberations, supported by discussions with experts and exchanges of experience, aimed at consensus building; 2) research, policy analysis and data collection for the debates of government representatives and experts; and 3) technical assistance tailored to the specific requirements of developing countries, with special attention to the needs of the least developed countries and of economies in transition.
- **World Bank.**⁴³ It promotes long-term economic development and poverty reduction by providing technical and financial support to help countries reform particular sectors or implement specific projects—for example, building schools and health centres, providing water and electricity, fighting disease, and protecting the environment. World Bank assistance is generally long term and is funded both by member country contributions and through bond issuance. Environment has been integrated into the World Bank’s knowledge work, policy dialogues, country and sector strategies, and investments since 2002. Climate change is now at the forefront of thinking and operations at the World Bank

⁴¹ <http://www.oecd.org/env/epoc.htm>

⁴² <http://unctad.org/en/Pages/AboutUs.aspx>

⁴³

<http://web.worldbank.org/WBSITE/EXTERNAL/EXTABOUTU/S/0,,contentMDK:20103838~menuPK:1696997~pagePK:51123644~piPK:329829~theSitePK:29708.00.html>

– with close to 90 percent of 2010 country assistance and partnership strategies emphasizing climate action. A new Environment Strategy for the World Bank Group is being drafted – the first phase of consultations highlighted demand from countries for greener growth paths.⁴⁴

- **ISO** (International Organization for Standardization).⁴⁵ ISO 14001 is the most widely adopted voluntary environmental regulation which encourages firms to take environmental action beyond what domestic government regulations require.
- International body of climate scientists, the **Intergovernmental Panel on Climate Change (IPCC)**.⁴⁶ Established by UNEP and the World Meteorological Organization (WMO) in 1988, it provides a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts. The IPCC is a scientific body under the auspices of the United Nations which reviews and assesses the most recent scientific, technical and socio-economic information produced worldwide relevant to the understanding of climate change.

Trade issues in the UNFCCC Framework

The Intergovernmental Negotiation Committee that negotiated the UNFCCC addresses trade concerns, as reflected in the following Convention Article 3, paragraph 5:

“The Parties should cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all Parties,

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<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/ENVIRONMENT/0,,contentMDK:20325240~pagePK:210058~piPK:210062~theSitePK:244381.00.html>

⁴⁵ <http://home.cerge->

[ei.cz/richmanova/UPCES%5CPotoski%20Prakash%20Racin%20iso-ajps.pdf](http://richmanova/UPCES%5CPotoski%20Prakash%20Racin%20iso-ajps.pdf)

⁴⁶

http://www.ipcc.ch/organization/organization.shtml#_UZZEY6LFle5

particularly developing country Parties, thus enabling them better to address the problems of climate change. 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.”

“Common but differentiated responsibility” is a key principle of the UNFCCC at the heart of the discussions in relation to climate change action. As mentioned by Teehankee, Jegou, Rodrigues (2012; 19)

“the asymmetric action it provides for raises concerns that the competitive position of actors in different countries will be altered as some will have to carry significant levels of carbon costs, whereas others will not. This in turn might prompt certain countries to take action to preserve their competitive position, possibly by using trade-related policies and measures.”⁴⁷

The table 2 below identifies the country groups and obligation differentiations under UNFCCC. These obligations are in line with the solutions proposed in this policy paper. For instance, the promotion and facilitation of technology transfer to economies in transition (EITs) and non-Annex I parties (established by Annex II in regards to mitigation), can be supported with the use of Green TRIPS.⁴⁸

⁴⁷ Teehankee, Jegou, Rodrigues (2012), “Multilateral Negotiations at the Intersection of Trade and Climate Change”, ICTSD Issue Paper no.2, page 19, <http://ictsd.org/downloads/2012/06/multilateral-negotiations-at-the-intersection-of-trade-and-climate-change.pdf>

⁴⁸ The Convention divides countries into three main groups according to differing commitments: **Annex I** Parties include the industrialized countries that were members of the OECD in 1992, plus countries with economies in transition (the EIT Parties), including the Russian Federation, the Baltic States, and several Central and Eastern European States. **Annex II** Parties consist of the OECD members of Annex I, but not the EIT Parties. They are required to provide financial resources to enable developing countries to undertake emissions reduction activities under the Convention and to help them adapt to adverse effects of climate change. In addition, they have to “take all practicable steps” to promote the development and transfer of

Likewise, according to the UNFCCC framework, least developed countries that are non-Annex I parties, should be given special consideration. The following sections below address and go beyond the “special consideration” proposed by UNFCCC.

Recently, the Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP)⁴⁹, moved onto issues aimed at increasing countries’ emissions-reduction commitments and moving toward a protocol, another legal instrument, or an agreed outcome with legal force under the UNFCCC applicable to all parties by 2015. During the discussions, developing countries stressed that developed countries have made inadequate progress in combating climate change, while developing countries called for global cooperation on technology transfer and capacity building. The United States proposed the idea of a “Spectrum of Commitments”, idea that suggests that every country determines its own national “contribution” to curbing global climate change and presents it to the international community.

environmentally friendly technologies to EIT Parties and developing countries. Funding provided by Annex II Parties is channelled mostly through the Convention’s financial mechanism.

Non-Annex I Parties are mostly developing countries. Certain groups of developing countries are recognized by the Convention as being especially vulnerable to the adverse impacts of climate change, including countries with low-lying coastal areas and those prone to desertification and drought. Others (such as countries that rely heavily on income from fossil fuel production and commerce) feel more vulnerable to the potential economic impacts of climate change response measures. The Convention emphasizes activities that promise to answer the special needs and concerns of these vulnerable countries, such as investment, insurance and technology transfer.

LDCs are given special consideration under the Convention on account of their limited capacity to respond to climate change and adapt to its adverse effects. Parties are urged to take full account of the special situation of LDCs when considering funding and technology-transfer activities. For an overview of UNFCCC Parties and Observers see http://unfccc.int/parties_and_observers/items/2704.php

⁴⁹ The Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP) is a subsidiary body that was established to develop a protocol, another legal instrument or an agreed outcome with legal force under the Convention applicable to all Parties. The ADP is to complete its work as early as possible but no later than 2015 in order to adopt this protocol, legal instrument or agreed outcome with legal force at the twenty-first session of the Conference of the Parties and for it to come into effect and be implemented from 2020. See <http://unfccc.int/bodies/body/6645/php/view/documents.php>

On the other hand, China for the first time showed disposition to place a ceiling on greenhouse gas emissions starting in 2016.⁵⁰

These most recent meetings are discordant and lack legal binding force. There are a few clauses pertaining to trade in the UNFCCC framework. Although country group obligations under UNFCCC are very much related to trade issues (e.g. TRIPS and TRIMS Agreements) the UNFCCC does not provide enough legal provisions in regard to the link between climate change and trade.

Furthermore, and as it will be highlighted in the section on new thinking regarding the interface between trade, investment and climate change regimes, the annotated outline of the UN Global Sustainable Development Report of 2013⁵¹ which maps the universe of assessments related to sustainable development, shows substantial shortcomings regarding link between sustainable development and trade and makes no mention of trade in its overall assessment.

Table 2: Country groups and obligation differentiations under UNFCC

COUNTRY GROUP	ANNEX I	ANNEX II	NON-ANNEX I
MEMBERS	<ul style="list-style-type: none"> Industrialized countries (all 24 members of the Organization for Economic Cooperation and Development in 1992, 14 economies in transition (EITs), Monaco, Liechtenstein)²² and the European Union²³ 	<ul style="list-style-type: none"> Industrialized countries (only 23 of the OECD members in 1992)²⁴ and the European Union 	<ul style="list-style-type: none"> Developing countries²⁵
MITIGATION	<ul style="list-style-type: none"> Adopt policies and measures with the aim of reducing their 2000 greenhouse gas emissions to 1990 levels EITs have “flexibility” in implementing commitments 	<ul style="list-style-type: none"> Provide financial resources to enable developing countries to mitigate climate change Promote and facilitate technology transfer to EITs and non-Annex I parties ** 	<ul style="list-style-type: none"> The Conference of the Parties (COP) identifies activities to address non-Annex I needs and concerns No quantitative obligations Least-developed countries given special consideration
ADAPTATION	<ul style="list-style-type: none"> Plan, implement, and publish strategies of integrating adaptation to climate change in development 	<ul style="list-style-type: none"> Assist developing countries to adapt to climate change ** 	<ul style="list-style-type: none"> Plan, implement, and publish strategies of integrating adaptation to climate change in development

Source: WTO and UNEP (2009), “Report on “Trade and Climate Change”, p.69, http://www.wto.org/english/res_e/booksp_e/trade_climate_change_e.pdf
 Legend: ** relates to later chapter on Green TRIPS

⁵⁰ <http://ictsd.org/i/news/bioresreview/164809/>

⁵¹

<http://sustainabledevelopment.un.org/content/documents/1737outline.pdf>

Relevant WTO rules to address climate change

The WTO agreements cover goods, services and intellectual property and establish the principles of liberalization and permitted exceptions. According to the WTO, “[t]he general approach under WTO rules has been to acknowledge that some degree of trade restriction may be necessary to achieve certain policy objectives as long as a number of carefully crafted conditions are respected.”⁵² The following WTO Agreements and Decisions are relevant to deal with the interface between trade and environment namely:⁵³

- The General Agreement on Trade in Services
- The Agreement on Technical Barriers to Trade
- The Agreement on Sanitary and Phytosanitary Measures
- The Agreement on Trade-Related Aspects of Intellectual Property Rights
- The Agreement on Subsidies and Countervailing Measures
- The Agreement on Agriculture
- Ministerial Decision on Trade and Environment
- A Decision on Trade in Services and the Environment

The rules and jurisprudence relevant to the examination of climate change measures are mainly related to GATT Article XX, the PPMs (processes and production methods) issue, and the definition of a like product). As identified by the WTO, a number of specific rules may be

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See

http://www.wto.org/english/tratop_e/envir_e/climate_measures_e.htm

⁵³ For an explanation of the relevant disciplines see http://www.wto.org/english/tratop_e/envir_e/issu3_e.htm. It is worth noting that the WTO does not list the TRIMS Agreement among the relevant WTO texts establishing rules which deal with the interface between trade and environment.

relevant for measures aimed at mitigating climate change including:⁵⁴

- disciplines on tariffs (border measures), essentially prohibiting members for collecting tariffs at levels greater than that provided for in their WTO scheduled consolidation
- a general prohibition against border quotas
- a general non-discrimination principle, consisting of the most-favoured nation and national treatment principles
- rules on subsidies
- rules on technical regulations and standards, which may not be more restrictive than necessary to fulfil a legitimate objective. Technical regulations and standards must also respect the principle of non-discrimination and be based on international standards, where they exist. There are also specific rules for sanitary and phytosanitary measures which are relevant for agricultural products.
- disciplines relevant for trade in services, imposing general obligations such as most-favoured-nation treatment, as well as further obligations in sectors where individual members have undertaken specific commitments
- rules on trade-related intellectual property rights. These rules are relevant for the development and transfer of climate-friendly technologies and know-how.

All in all, three main legal challenges arise concerning climate change and the WTO: ⁵⁵ 1) coverage (to what extent Articles III, II and XX of the GATT are relevant); 2) compatibility; and 3) justifiability (how to justify an environmental measure to be in line with GATT Art. XX).

⁵⁴ WTO Secretariat, note on “The multilateral trading system and climate change”, page 7, http://www.wto.org/english/tratop_e/envir_e/climate_change_e.pdf

⁵⁵ TAIT Second Conference “Climate change, trade and competitiveness: Issues for the WTO”, 16 to 18 June, 2010.

In particular, the implementation of a trade measure will be a key factor for the dispute settlement body because it is not enough to justify such a measure. Indeed, it is necessary to justify how to implement it in order to avoid a *de facto* discrimination. Although there is room for unilateral tariff reduction, the conclusion of the Doha Round remains a collective action problem. As such, it circumvents the UNFCCC process which is grounded on the principle of “common but differentiated responsibilities”.

However, the question if “common but differentiated responsibilities” should be applied at the country or sector level still remains. Both the WTO and the UNFCCC negotiations face the same challenges: in both negotiations there are very heterogeneous members with very different interests who have to reach consensus.

In regards to the functioning of the WTO Committees, it is important to highlight that the Committee on Trade and Environment Regular Session is a forum where WTO Members timidly share experiences on certain environmental issues and the Secretariat of the UNFCCC is occasionally invited to report on developments in the climate change negotiations.⁵⁶ On the other hand, the Committee’s Special Session has unsuccessfully tried for years to negotiate improved market access for a limited number of environmental goods. The negotiations on environmental services have not even started. Negotiations on environmental services are part of the new plurilateral negotiation on services (ISA) which is currently being negotiated by more than thirty WTO Member countries. It remains to be seen whether the ISA will be an agreement.

within the WTO based on MFN or whether the Members engaged in the ISA might take the emerging agreement outside of the WTO

As far as the forward looking agenda is concerned, any times any new issues are proposed to be discussed, some developing country Members immediately complain, saying that they should finish the old issues before taking up new ones such as measures relating to the preservation of environment.

In conclusion, the list above suggests that there are many disciplines in the WTO framework (in contrast to the UNFCCC framework) that pertain to trade and environment. In this sense, the WTO is the framework (in contrast to UNFCCC) which offers the most promising possibility to reach an effective cross-regime agreement to address trade and climate change in the near future.

Environmental provisions in regional agreements

Another layer of the global environmental governance are agreements at the regional level (RTAs/FTAs and BITs) that incorporate environmental chapters or provisions. As identified in the box below, some regional agreements include a comprehensive environmental chapter, or are accompanied by an environmental side agreement, or both. Some of these agreements deal with environmental issues in the form of exception clauses to general trade obligations.

⁵⁶ These activities are viewed with suspicion by some WTO Members.

Box 4: Key environmental provisions in RTAs

Some countries consider environmental issues before entering into an agreement, by carrying out a prior assessment of its potential environmental impacts. A number of RTAs include provisions on environment in the body of the agreement, in paragraphs dealing mainly with environmental co-operation, or in detailed chapters dealing with a broad range of environmental issues. Other RTAs have an environmental side agreement. Some RTAs have both: general environmental issues are dealt with in the body of the agreement, while specific aspects – mainly environmental co-operation – are spelled out in more detail in a side agreement. A few RTAs, which did not originally include environmental provisions, have later been complemented by an environmental agreement.

Environmental elements typically found in many RTAs are environmental cooperation mechanisms. These range from broad arrangements, to co-operation in one specific area of special interest to the Parties. The areas of co-operation in different RTAs vary significantly, and depend on a range of factors, e.g. on whether the trade partners have comparable levels of development or not (in which case, co-operation often focuses on capacity building), or whether they have common borders.

Environmental standards also figure in a range of agreements, in various forms. The obligation for Parties' to enforce their own environmental laws is included mainly in agreements involving the United States and Canada. These agreements generally also include provisions on procedural guarantees in environmental matters, as well as different types of enforcement and dispute settlement mechanisms. A few RTAs refer more generally to the Parties' commitment to maintain high levels of environmental protection.

Others, such as those recently negotiated by New Zealand, include references to the inappropriateness of lowering environmental standards. Some agreements also strive for harmonisation, for example, the MERCOSUR Framework Agreement for Environment, where Parties undertake to co-operate on the harmonisation of environmental standards.

Most RTAs contain clauses reiterating the compatibility between Parties' trade obligations and their right to adopt or maintain environmental regulations and standards. Some also include a reference to the compatibility between the agreement and multilateral or regional environmental agreements.

Source: OECD (2007), "Environment and Regional Trade Agreements", page <http://www.oecd.org/env/38599709.pdf>

Different RTAs aim at promoting trade in environmental goods. For example, Article V of the USA-CAFTA-DR Environmental Cooperation Agreement, includes among its work programme and priority areas for cooperation facilitating technology development and transfer and training to promote the use, proper operation and maintenance of clean production technologies [subparagraph (g)], and developing and promoting environmentally beneficial goods and services [subparagraph (h)]. On the other hand, the agreement between Japan and Mexico for the Strengthening of Economic Cooperation contains a provision (Article 147) on co-operation in the field of environment making reference to co-operation activities such as exchange of information on policies, laws, regulations, and technology related to the preservation of the environment, and the implementation of sustainable development. Finally, Chapter 4 of the CARIFORUM agreement also stipulates the parties' resolution to "conserve, protect and

improve the environment" and "to promote trade in environmental technologies, renewable- and energy-efficient goods and services".⁵⁷

BITs may also include environmental references. However, there is no established trend to include such references in the BITs. A survey by Gordon and Pohl (2011)⁵⁸ for the OECD that analyzed the treaty language referring to environmental concerns, shows that i) more treaties contain such

⁵⁷ Gallagher, P. and Y. Serret (2011), "Implementing Regional Trade Agreements with Environmental Provisions: A Framework for Evaluation", OECD Trade and Environment Working Papers, 2011/06, <http://dx.doi.org/10.1787/5kg3n2crpxwk-en>, p.16

⁵⁸ Kathryn Gordon and Joachim Pohl (2011), "Environmental concerns in international investment agreements: A survey," OECD Working Papers on International Investment, No. 2011/1, <http://www.oecd.org/dataoecd/50/12/48083618.pdf>. The study analyzed the use of references to environmental concerns in a sample of 1,623 international investment agreements (IIAs) that the 49 countries that are invited to the "Freedom of Investment" process have concluded with any other country.

language over time; ii) only a small number (about 8% of the sample treaties) includes references to environmental concerns; and iii) the content of such language varies greatly both across

countries and across time. The box below highlights the features of the environmental language used in BITs identified in the report for the OECD.

Box 5: Environmental language addressing distinct policy purposes

- General language in preambles that establishes protection of the environment as a concern of the parties to the treaty; 66 treaties (4.1%) contain such language.
- Reserving policy space for environmental regulation for the entire treaty; this is the most common category of language – it appears in 82 treaties (5.2%).
- Reserving policy space for environmental regulation for specific subject matters (e.g. performance requirements and national treatment); this language appears in 20 treaties (1.3%), of which 16 are FTAs and only 4 BITs.
- Indirect expropriation: Twelve of the treaties (0.75%) contain provisions that preclude non-discriminatory environmental regulation as a basis for claims of "indirect expropriation".
- Not lowering environmental standards to attract investment: Forty-nine treaties (3.1%) contain provisions that discourage the loosening of environmental regulation for the purpose of attracting investment.
- Environmental matters and investor-state dispute settlement. Sixteen treaties (1%) contain provisions related to the recourse to environmental experts by arbitration tribunals. One treaty excludes the environmental provisions as a basis for investor-state claims.
- General promotion of progress in environmental protection and cooperation. Twenty treaties (1.3%) contain provisions that encourage strengthening of environmental regulation and cooperation.

Source: Kathryn Gordon and Joachim Pohl (2011), "Environmental concerns in international investment agreements: A survey," OECD Working Papers on International Investment, No. 2011/1, <http://www.oecd.org/dataoecd/50/12/48083618.pdf>, pages 7-8.

Effective governance regimes to address climate change as a market failure⁵⁹

Climate change is a market failure inextricably affecting sustainable development and making it more difficult for countries to achieve the Millennium Development Goals (IPCC, 2007; p. 826-827).⁶⁰

To put economies on low-carbon pathways requires defining the concept of "market failure" in relation to the ability of the market mechanism to achieve specific low-carbon development goals set by the government, rather than in relation to the efficient allocation of resources. Given the

⁵⁹ This section is based on Saner (2011), "International governance options to strengthen WTO and UNFCCC", <http://www.diplomacydialogue.org/publications/environmental-diplomacy/101-international-governance-options-to-strengthen-wto-and-unfccc>

⁶⁰ Intergovernmental Panel on Climate Change, Geneva. IPCC (Intergovernmental Panel on Climate Change), 2007: *Climate Change 2007 – Impacts, Adaptation and Vulnerability*. New York: Cambridge University Press, 976 pp. *Vulnerability*. New York: Cambridge University Press, 976 pp.

ongoing discussion of the financial crisis that began in 2008, the tensions over exchange rate policies, the degree of political influence enjoyed by powerful TNCs, and the failure of the UN Climate Convention process to agree on a global climate governance regime, the time is ripe to consider effective governance to achieve low-carbon development and investment pathways.

Governance structures that are currently in place and which can impact the roles that TNCs and FDI play with respect to low-carbon development pathways include:⁶¹

- International governmental regimes, in particular the WTO regime, economic governance, environmental markets
- Corporate governance, including voluntary industry (or individual corporation) self-regulation, global value chain relationships

⁶¹ Arquit, Gage and Saner (2011).

- Multi-stakeholder partnerships
- Domestic governance regimes, from national to local level, particularly investment, taxation, product policies/standards, energy/climate
- Civil Society Governance schemes, be this at grassroots level or through professional associations and think tanks.

There is an existential “race between political tipping points and natural tipping points”⁶², and it is not clear that the necessary economic governance reforms will be forthcoming in a timely fashion. Speaking in Copenhagen in December 2009, Heads of State seemed to be converging around the aim of limiting the average global temperature increase to between 1.5 and 2°C above the pre-industrial level⁶³, which would require global emissions to peak on a timescale of roughly a decade. Yet global emissions are growing at a rate of 1 – 2% annually, putting the world on a trajectory that would at least triple the amount of climate warming. The global recession has created some breathing space but experts agree that it will be exceedingly challenging, if not impossible, to achieve the goal suggested at the Copenhagen UNFCCC meeting, not the least because all of the growth in energy-related carbon dioxide emissions is projected to come from developing countries (IEA, 2009).

Bearing in mind the dangers caused by climate change, aiming at low carbon investment at national and global levels is sensible and urgently

needed. Low carbon investment could be achieved through incentives and sanctions which can act as drivers and determinants influencing investors and investment flows in the direction towards low carbon investment. Low carbon investment could be achieved at national levels through government policies, civil society pressures and business decisions by commercial actors. At the same time, business investors like TNCs take investment decisions based on market and business strategy criteria which can lead to low or high carbon investment.

Attempting to achieve low carbon investment at international levels is on the other hand the aim of multilateral agreements and conventions as for instance the Multilateral Environmental Agreements (MEAs) which on the other hand face the governance impact of other multilateral agreements such as the WTO which either hinder or facilitate the goal of achieving low carbon investment. However, MEAs have had evidenced little if not no influence in putting TNCs on low carbon pathways.

In view of the rudimentary mentioning of trade in the main MEAs, the following section will focus instead on what can be achieved through more systemic inclusion of stringent environmental clauses within the WTO. The next sections of this article focus on what options are available within the WTO to combat climate warming.

⁶² Brown, Lester (2009); Plan B: Mobilizing to Save Civilization, Earth Policy Institute, Washington, USA.

⁶³ One outcome of the meeting was the Copenhagen Accord (http://unfccc.int/files/meetings/cop_15/application/pdf/cop15_cph_auv.pdf), a political agreement that roughly 110 governments have since associated with. This agreement expresses the political will to “hold the increase in global temperature below 2 degrees Celsius”.

Chapter 3

New thinking about the interface between trade, investment and climate change

Main message:

Different initiatives listed in this section point to new emerging thinking suggesting that policy space is available to consider policy options like investment and competition as well as the need to rethink cross-regime approaches involving trade, investment and climate change. Radical solutions like the adoption of a carbon tax have been proposed. Since a carbon tax is difficult to implement, this paper focuses on relatively easier-to-implement options such as Green TRIMS, Green TRIPS and Green Tri-sectoral Plurilateral Agreement.

New thinking is emerging in regards to the interface between trade, investment and climate change. Different international organizations (but also civil society organizations) are discussing different alternatives to strive towards green investment and a green economy. This section identifies some of the many initiatives and programmes put in place by different organizations that suggest focusing on green investment.⁶⁴ It is worth noting that in some cases, the narratives do not refer at all to the WTO rules or to the UNFCCC framework.

UNCTAD has taken a lead in supporting developing countries' strategies related to investment agreements. It has developed a set of core principles⁶⁵ which are operationalized in the form of an Investment Policy Framework for Sustainable Development (IPFSD), translating these core principles into Guidelines for National Investment Policies and Options for provisions for the design and use of International Investment Agreements. This approach towards sustainable

investment has a precedent in the World Investment Report of 2010.⁶⁶ That year, the report had a focus on low-carbon investment and suggested different actions that have direct or indirect relation with the TRIMS and TRIPS agreements.

Some of these references indicate that some of the actions proposed in WIR 2010 are trade-related investment measures focusing on green investment. As highlighted by the WIR 2010, these actions have also Intellectual Property Rights implications. Hence, greening investment strategies needs to assure coherence with the WTO agreements, TRIMS and TRIPS.

Conversely, it is worth mentioning that the recently released UNCTAD report (2013) on "Global Value Chains and Development: Investment and value added trade in the global economy"⁶⁷ does not mention the TRIMS option a single time. Indeed, all seven references to the WTO made in the report are related to the OECD-WTO database on global value chains but no reference is made to either "green" or "low-carbon" investment.

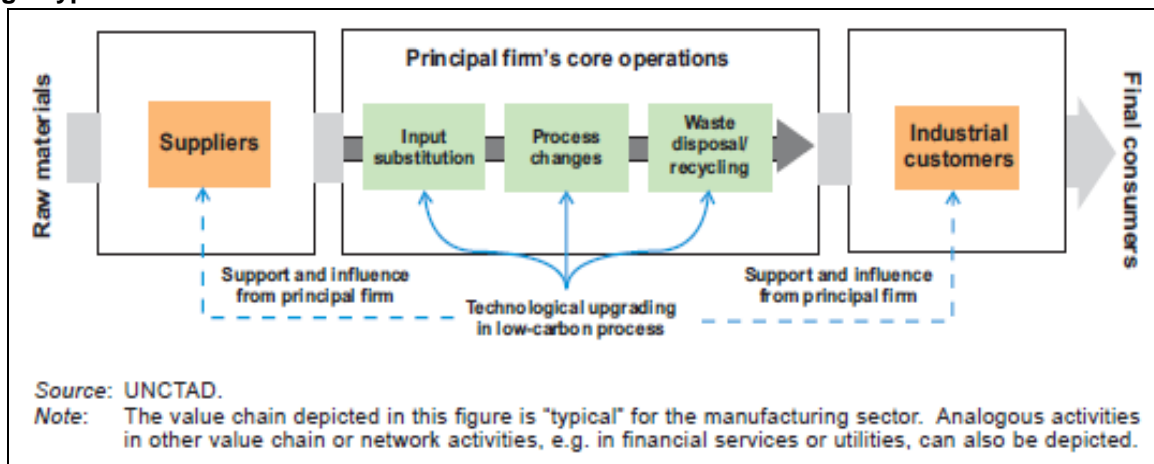
⁶⁴ This is not an exhaustive list of initiatives and programmes

⁶⁵ The Core Principles of investment policymaking of the Investment Policy Framework for Sustainable Development (IPFSD) are: 1. Investment for sustainable development; 2. Policy coherence; 3. Public governance and institutions; 4. Dynamic policymaking; 5. Balanced rights and obligations; 6. Right to regulate; 7. Openness to investment; 8. Investment protection and treatment; 9. Investment promotion and facilitation; 10. Corporate governance and responsibility; and 11. International cooperation. See <http://investmentpolicyhub.unctad.org/Views/Public/Index/IPFS-D.aspx>

⁶⁶ The first author of this policy brief was member of the think tank of WIR 2010 and drafted a concept note for the WIR 2010 issue. See footnote 9.

⁶⁷ http://unctad.org/en/PublicationsLibrary/diae2013d1_en.pdf

Figure 2: UNCTAD's identification of Low-carbon processes leading to GHG emissions reductions along a typical value chain



Source: UNCTAD (2010), World Investment Report, page 105, http://unctad.org/en/Docs/wir2010_en.pdf

UNEP has called for a "Global Green New Deal" (2009) and has published a document identifying national policies providing green stimulus for the Pittsburgh **G20** Summit in 2009.⁶⁸ The recommendations made in regards to changes in domestic and international policy architectures (UNEP 2009; 2) are reproduced below:

"The green investments contained in the global stimulus packages need to be supported by domestic and international policy architectures in order to ensure they contribute to a long-term transition to a green economy. Six domestic policy reforms are recommended:

- *Reduce perverse subsidies (for example on fossil fuels and non-sustainable agriculture);*
- *Create positive incentives and appropriate taxes to reward more sustainable practices;*
- *Improve land use and urban policy;*
- *Develop integrated management of freshwater resources;*

- *Introduce and improve environmental legislation and enforcement; and*
- *Implement systems for monitoring and accounting for the economic contributions made by green investments, such as environmental economic accounting.*

The Global Green New Deal policy brief also identified the international policy architecture requiring attention: trade, aid, carbon pricing, markets for ecosystem services, development and transfer of technology, and policy coordination. As part of reforms in these areas, further support should be offered for green investments in non-G20 countries to ensure we achieve a global green economic transition."

Furthermore, it is worth noting that UNEP's 2012 Annual Report lists only one reference to the WTO and about 5 or 6 to the UNFCCC.⁶⁹ Some relevant references for the issue of green investment included in this report are transcribed below:

"UNEP's climate finance programmes such as ACAD

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<http://www.unep.ch/etb/publications/Green%20Economy/G%2020%20policy%20brief%20FINAL.pdf>

69

http://www.unep.org/gc/gc27/docs/UNEP_ANNUAL_REPORT_2012.pdf

[African Carbon Asset Development] have made a real difference by building the skills and understanding of financial institutions on carbon finance, supporting entrepreneurs with seed capital and improving the access of end-users to clean energy technologies through practical micro-credit schemes. Together, they are helping to realize the abundant low-carbon investment opportunities in Africa.” (p.32)

“The Natural Capital Declaration (NCD), a finance-led initiative to integrate natural capital considerations into lending, investment and insurance decisions, was launched at Rio+20 and is signed up to by 40 CEOs of financial institutions. The NCD has four core commitments to: build an understanding of dependencies on natural capital; embed natural capital in financial products and services; report or disclose on the theme of natural capital; and account for natural capital in accounting frameworks. UNEP’s Finance Initiative is planning to develop a strategy to guide financial institutions to implement the four commitments.” (p.65)

“Enhanced understanding of the resource flows and their related environmental impacts along global value chains, as well as the potential for decoupling economic growth from environmental degradation Improved capacity of governments and public institutions to manage key resource challenges, and integrate resource efficiency in their policies Increased uptake in resource efficiency management practices and investments over product life-cycles and along supply chains. Better

informed consumers favouring more resource-efficient and environmentally friendly products.” (p.89)

“Accelerating the transition to resource-efficient societies. Applying insights from scientific and macroeconomic analyses to identify investment opportunities for sustainable business models and enhancing the efficiency of resource intensive industries and supply chains in key target sectors.” (p.89)

UNEP has developed businesses cases to support the transition towards a green economy. Some publications related to this issue are: “The Business Case for the Green Economy: Sustainable Return on Investment” and the “Principles for Responsible Investment and UN Global Compact Principles” developed by the UNEP Finance Initiative.

Within the WTO there has been an attempt to address new challenges related to trade, climate change, and energy, among others. On 13 April 2012, the Director-General of the WTO, Pascal Lamy, announced the establishment of the Panel on Defining the Future of Trade.⁷⁰ The Panel was mandated to: “...examine and analyse challenges to global trade opening in the 21st century” against the background of profound transformations occurring in the world economy, looking “at the drivers of today’s and tomorrow’s trade, [...] at trade patterns and at that it means to open global trade in the 21st century, bearing in mind the role of trade in contributing to sustainable development, growth, jobs and poverty alleviation.” Below are transcribed some

⁷⁰ The panel was set up by the WTO DG under his own responsibility and its report was a private contribution to internal discussions by WTO Members. According to some WTO Delegates, both the composition of the panel and its report were received with skepticism by quite a few Members and its recommendations have not even been discussed in any body of the WTO.

of the report's most relevant ideas and recommendations.⁷¹

"Many areas of climate change policy potentially intersect with trade policy. In the past, international agreements on the environment, such as the Montreal Protocol, have managed both the environmental and trade aspects of cooperation without a clash. This should provide inspiration to governments as we risk encountering problems of incompatibility that could lead to a clash of regimes that would hurt climate change mitigation efforts and trade. This has not occurred yet, although it has been widely discussed and is a concern of many. One way we already see how this may happen is in the rash of contingent protection cases initiated at the WTO among several countries in relation to government support for renewable energy. In our view it is the primary responsibility of the environment negotiators to define what is necessary in order to ensure adequate mitigation actions, and then it is a shared responsibility of the trade and environment communities to ensure that measures do not undermine trade and pander to special interests." (p.37) (Underlining added by author)

The report addresses the issue of coherence of international economic rules, it states that trade and investment go hand-in-hand and that trade can support sustainable development. However, it states that "it is the primary responsibility of environment negotiators to define necessary

⁷¹ WTO (2013), "The Future of Trade: The Challenges of Convergence", Report of the Panel on Defining the Future of Trade convened by WTO Director-General Pascal Lamy, http://www.wto.org/english/thewto_e/dg_e/dft_panel_e/future_of_trade_report_e.pdf

mitigation actions, and a shared responsibility of the trade and environment communities to ensure compatibility between the two regimes". This statement seems like an abdication of WTO responsibility in promoting sustainable development and fighting climate change. Furthermore, the report does not contain a single reference to the UNFCCC.

Other international organizations have also started to work on these trade-investment-environment interdependence. **UNESCAP** published a document on "Promoting Climate-Smart Foreign Direct Investment"⁷² which highlights the importance and determinants of climate-smart foreign direct investment.

A recent report by the **United Nations Development Group** highlights that consultations with stakeholders reveal that environmental damage and natural resource scarcity that threatens people's health and livelihoods. At the national level, people are calling for action on the environmental impacts that they can see and feel. According to this publication,

"Though effective for campaigning, the simplicity of the MDGs has also been characterized by some as their main weakness. They do not reflect the full breadth of the Millennium Declaration, as the choice of MDGs omitted issues such as governance, peace and security, equality and unprecedented demographic change, and minimized the framing of environmental sustainability."⁷³

The **United Nations Division for Sustainable Development (United Nations Department of Economic and Social Affairs, UNDESA)** published in 2012 a report called "A guidebook to

⁷² <http://www.unescap.org/tid/publication/tipub2614-chap7.pdf>. The document offers an example of environmental provisions in BITs on page 173.

⁷³ United Nations Development Group (2013), "Global Conservation Begins: Emerging views for a new development agenda", <http://www.undp.org/content/dam/undp/library/MDG/english/global-conversation-begins-web.pdf>, p.3

the Green Economy” dealing with history, definitions and a guide to recent publications in regard to Green Economy, Green Growth, and Low-Carbon Development.⁷⁴ However, it is worth noting that while the publication contains some references to the UNFCCC, there is no single mentioning of the WTO. Furthermore, UNDESA’s annotated outline of the UN Global Sustainable Development Report 2013⁷⁵ is another example of an official document which does not make any reference to the link between trade and climate change, which shows shortcomings regarding link between sustainable development goals and the trade and environment frameworks.

The **World Bank** has recently presented its approach to climate finance and Public Private Partnerships.⁷⁶ The main passages related to CDM (Clean Development Mechanism) and green investment are reproduced below:

“The core component of the green investment climate – Green Investment Policies and Incentives – (see Figure 7) includes four main parts: (i) policies and legislation; (ii) financial and economic instruments; (iii) programs and institutions; and (iv) the regulatory environment.

As indicated, the CDM regulatory framework is limited in supporting new investments to reach its green growth potential. Successful growth in these investments requires a credible and efficient regulatory framework of enforceable contracts that will ensure that financially supported projects actually achieve their service obligations and environmental

benefits. Thus, the third element of the Green Infrastructure Framework is a regulatory component integrated with the existing country regulatory framework. The main element of such a regulatory framework should be a reliable and efficient system for measuring, reporting and verifying (MRV) environmental benefits of the investment that will be supported with concessional or subsidized financing, particularly if the intention is to issue CERs for up-front financing.

*... The need for some level of concessional financing or outright subsidy support is widely understood but the approach must be equitable, non-political and deliver a sufficient level of support. Current international programs have sought to address some of these constraints but lack elements in their framework to utilize public financing to their maximum effectiveness and to help host governments to play a responsible and legitimate role in resolving the financing dilemma of many green investments. The carbon market historically has not provided stable and predictable financing mechanism to support new investments in clean technologies. Moreover, CDM that operates within this market is not designed to handle structured finance requirements that many clean technology projects need in order to reach financial closure.” (pp. 9-11)
(Underlining added by author)*

⁷⁴ UNDESA (2012), “A guidebook to the Green Economy”, http://www.uncsd2012.org/content/documents/528Green%20Economy%20Guidebook_100912_FINAL.pdf

⁷⁵ UNDESA (2013), “Annotated outline of the UN Global Sustainable Development Report”, http://sustainabledevelopment.un.org/content/documents/1737_outline.pdf

⁷⁶ <http://www.worldbank.org/en/news/feature/2013/03/13/a-public-private-partnership-approach-to-climate-finance>

The World Bank also published a report on the State and Trends of the Carbon Market. According to the 2012 report, several domestic and regional low-carbon initiatives, including market mechanisms, gained increasing traction in both developed and developing economies in

2011 and early 2012. These initiatives were implemented in Australia (Clean Energy Act), California and Québec (cap-and trade regulation), Mexico and the Republic of Korea.⁷⁷

Strategic collaborations around climate change issues and action are essential for the World Bank. Its president, Mr. Jim Yong Kim said recently: "To deliver bold solutions on climate change, we need to listen to and engage broader and more diverse audiences."⁷⁸

Connect4Climate (C4C)⁷⁹ is a global partnership programme dedicated to climate change and supported by the bank, Italy's environment ministry and the Global Environment Facility (GEF)⁸⁰. The programme operates as a coalition of more than 150 knowledge partners ranging from major UN agencies to academic institutions to media organizations and NGOs.

The **International Chamber of Commerce (ICC)** has established the ICC World Trade Agenda initiative highlighting different business priorities. One of them is to "*foster greener economic activities through trade*".⁸¹ The World Trade Agenda is a strong business-led initiative to bolster rules-based trade. The WTO lends its support to this initiative by engaging business to provide recommendations to advance global trade negotiations. CEOs, senior corporate executives, and representatives of business organizations joined WTO Director-General Pascal Lamy at the first World Trade Agenda policy conference in March 2012, where participants began defining elements of a world trade agenda, underscoring the private sector's desire to move global trade talks out of the Doha Development Agenda deadlock.

⁷⁷ World Bank (2012), "State and Trends of the Carbon Market",

http://siteresources.worldbank.org/INTCARBONFINANCE/Resources/Executive_Summary_S_andT_2012_FINAL_120528.pdf, p.11

⁷⁸ <http://blogs.worldbank.org/climatechange/climate-change-lessons-cross-sector-collaboration>

⁷⁹ http://connect4climate.org/about_c4c/about-connect4climate

⁸⁰ <http://www.thegef.org/gef/>

⁸¹ <http://www.iccwbo.org/global-influence/world-trade-agenda/>

The **OECD** published two reports in 2011 on "Harnessing Freedom of Investment for Green Growth" and on "Environmental concerns in international investment agreements: a survey".⁸² However, it is worth noting that none of these two OECD reports relate to environmental concerns in international investment agreements nor do they make any reference at all to the WTO framework or the TRIMS Agreement. The same applies to the "OECD Guidelines for Multinational Enterprises: Reference instruments and initiatives relevant to the updated Guidelines" (2012).⁸³ Furthermore, the OECD Policy Framework for Investment includes "Responsible Business Conduct" as one of its policy areas but there is no mention to environment.⁸⁴

The recent 2013 OECD Global Forum on Development⁸⁵ addressed, among other issues, the inter-linkages and trade-offs of the multi-dimensional nature of poverty reduction approaches. The issues of climate change, trade and investment were identified as multi-dimensional challenges to fight poverty. Some of the main references in regard to environmental challenges, climate and resource use included in the OECD Discussion Paper (2013)⁸⁶ are reproduced below:

"While current poverty trends are broadly positive, for the environmental sector the news is almost entirely gloomy (Millennium Ecosystems Assessment, 2006; OECD, 2012). Of the nine planetary boundaries identified by the Stockholm Resilience Centre (Rockstrom et al., 2009) – the limits

⁸² OECD work on international investment law is available from <http://www.oecd.org/investment/internationalinvestmentagreements/oecdworkoninternationalinvestmentlaw.htm>

⁸³ OECD (2012), "Guidelines for Multinational Enterprises: Reference instruments and initiatives relevant to the updated Guidelines". <http://www.oecd.org/daf/inv/mne/ResourceDocumentWeb.pdf>

⁸⁴ <http://www.oecd.org/investment/toolkit/policyareas/>

⁸⁵ <http://www.oecd.org/site/oecdqfd/agenda.htm>

⁸⁶ OECD (2013), "The next Global Development Agenda: Ending Poverty, Promoting Sustainability", Discussion Paper for Session 1 on "The poverty challenge - Global trends, uncertainties, and national policy frameworks", <http://www.oecd.org/site/oecdqfd/Session%201%20-%20GFD%20Background%20Paper.pdf>

within which humanity can operate safely – three (climate change, biodiversity loss and the nitrogen concentration in the oceans) have already been breached and others are close to the edge. To avert catastrophe, current trends have to be reversed, and soon.”

“Climate change, in particular, has affected both the dynamics of global politics and the nature of global poverty. As the impacts of climate change on weather patterns and food security become clearer, it becomes more evident that a very large number of poor people will be increasingly vulnerable to its effects. These make life more uncertain for people already living extremely precarious lives.”

A key global priority over the next twenty years will be to reduce the unsustainable use of natural resources including water, fossil fuels and forests that has characterised growth in the past. If this does not happen, there is a possibility that the benefits of growth will be put at risk by future environmental disasters or the cumulative effects of a slowly changing climate. Fossil fuels currently account for 80% of energy consumption – it’s clear the scale of the transformation needed is very large (Espey, 2013).

At a national level, this requires first of all changed institutional frameworks to agree, implement and monitor an integrated sustainable development agenda. Too often structural issues, competition between ministries, and incentive structures for key staff work against rather than for combining the two halves of this single problem.

“Environmentally sustainable development will also require a changed incentives framework to encourage investments in new, more sustainable technologies and technology transfer, including through strict sustainability requirements for public investment programmes. It requires policies that incentivize a green growth that is more sustainable and results in the better valuation and management of the environment and natural resources. A priority for policy change should be to reduce fossil fuel subsidies, which would help to drive changes in energy use as well as freeing up resources for other things.”

“Achieving and sustaining prosperity globally so that poverty can be ended now, and the gains maintained in the future, requires thinking about a range of transformations simultaneously. No single actor has all the solutions – governments, the private sector and civil society all have a responsibility to make this happen, and a post-2015 agenda must speak to all of their interests and concerns.” (pp. 8-10)

Although this OECD Discussion paper focuses on environmental challenges, climate and resource use, there is no reference made to concrete solutions encouraging sustainable energy production or promoting green technologies and technology transfer. The paper contains only one reference to the idea of encouraging investments in “more sustainable technologies and technology transfer through strict sustainability requirements for public investment programmes.” Furthermore, the paper does not contain any reference at all to the UNFCCC and / or WTO frameworks.

The OECD has also developed a Policy Framework for Investment to mobilise private investment supporting economic growth and sustainable development.⁸⁷ This policy framework is a tool, providing a checklist of important policy issues for consideration by any government interested in creating an environment that is attractive to all investors and in enhancing the development benefits of investment to society, especially the poor. The Framework was adopted and declassified by the OECD Council, the governing board of the Organisation, and welcomed by Ministers at their annual OECD meeting in May 2006. It is worth noting that,

although this investment framework focuses on sustainable development, it does not address relevant issues for climate change such as low-carbon investment. The Framework also contains references to the WTO but it does not provide any single reference to the UNFCCC.

Last but not least, the OECD has highlighted the importance of promoting trade in green goods and services. The box below identifies different initiatives aiming at promoting trade in green goods and services.

Box 6: Initiatives to promote trade in green goods and services

- UNEP, the International Centre for Trade and Sustainable Development and the International Trade Centre are currently identifying international trade opportunities that will promote green growth. They are analysing how countries, especially developing countries, can respond to growing international demand for environmentally-friendly food, products and services.
- The International Organization for Standardization and several international NGOs, such as the Marine Stewardship Council, Forest Stewardship Council, and the Fair Trade Labelling Organization, have made efforts to harmonise standards with the consent of the international community to avoid such schemes becoming barriers to international trade or risking green protectionism.
- The European Commission has adopted new legislation to counter the trade in illegally harvested timber. In an effort to tackle the problem of illegal logging across the world in order to mitigate deforestation and climate change, it prohibits the placing of such timber on the European market. The new law affects both imported and domestically produced timber and timber products and the aim is to put in place due-diligence and other procedures to minimise the risk of illegal wood being traded (European Timber Regulation, 2013).
- Unilever has been working closely with its large network of suppliers of raw materials to explore how to do business with smallholders in a way that it improves their livelihoods. To give one example, in 2011 Unilever's Magnum ice cream brand partnered with the Rainforest Alliance to work with farmers in key cocoa-producing countries such as Ghana, Ecuador and Côte d'Ivoire on sustainable agricultural practices. After just one year, over 10 000 farmers had achieved Rainforest Alliance certification. Buyers benefit a guaranteed supply of higher quality beans, which helps the brand image, and local farmers benefit from better harvests and higher incomes (Unilever website, n.d.).

Source: OECD (2013), "Putting Green Growth at the Heart of Development", OECD Green Growth Studies, http://www.keepeek.com/Digital-Asset-Management/oecd/development/putting-green-growth-at-the-heart-of-development_9789264181144-en, p. 139

⁸⁷ OECD (2006) "Policy Framework for Investment", <http://www.oecd.org/daf/inv/36671400.pdf>

The **World Economic Forum** published the Green Investment Report (2013) on “The ways and means to unlock private finance for green growth”.⁸⁸ The Report does not contain a single reference to the WTO Agreements.

The **Global Carbon Project** is an initiative to assist the international science community to “establish a common, mutually agreed knowledge base supporting policy debate and action to slow the rate of increase of greenhouse gases in the atmosphere.”⁸⁹ Below are some relevant references made in the 2008 Report on “Carbon reductions and offsets”:⁹⁰

“The recently established voluntary carbon market is gaining momentum as growth in the demand for CO2 reductions is outpacing the wider introduction of low-carbon technologies in transport, energy production and manufacturing.”

“While there are concerns related to the voluntary and unregulated nature of this market, new robust standards, reporting and verification, along with broad project implementation are raising confidence in the system. The impact of voluntary carbon offsets is increasing as the economic analysis of the carbon market gains wider acceptance and the support of more speculative investors.”

“The goals of using the voluntary carbon offsets are largely enhanced if the purchase of offsets is preceded by the implementation of measures to reduce or avoid emissions.” (p.4)

While this publication contains many references to UNFCCC framework and to papers and reports

⁸⁸ World Economic Forum (2013), “The Green Investment Report: The ways and means to unlock private finance for green growth”, http://www3.weforum.org/docs/WEF_GreenInvestment_Report_2013.pdf

⁸⁹ <http://www.globalcarbonproject.org/about/index.htm>

⁹⁰ Global Carbon Project (2008), “Carbon reductions and offsets”. L. Coulter, JG Canadell, S Dhakal (ed.). Earth System Science Partnership Report No. 5. Global Carbon Project Report No. 6, Canberra, http://www.globalcarbonproject.org/global/pdf/GCP_C%20Offsets_Report%206.pdf

prepared by the UNFCCC Secretariat, there is no reference to the WTO framework.

Last but not least, civil society organizations like **CUTS International** suggest that

“[t]here is need for the WTO Secretariat to conduct joint studies and capacity building with organisations such as United Nations Framework Convention on Climate Change, Food and Agriculture Organisation to create better understanding on trade and trade-related issues in governing global public goods such as climate change, food security and how the poor countries can deal with them.”⁹¹

The CUTS’ publication suggests that the WTO Secretariat needs to conduct joint studies and capacity building with organisations such as United Nations Framework Convention on Climate Change, Food and Agriculture Organisation to better understand trade-related issues in governing global public goods such as climate change and how the poor countries can deal with it. However, the document does not provide any concrete proposals pertaining to WTO disciplines like TRIMS, TRIPS, energy and environment.

The **International Centre for Trade and Sustainable Development (ICTSD)** promotes the initiative of a plurilateral Sustainable Energy Trade Agreement (SETA) that would eliminate the barriers to trade and investment in the new green technologies that are needed everywhere to spur sustainable growth.⁹² SETA could bring together countries interested in addressing climate change and longer term energy security while maintaining open markets. Issues covered by this agreement would be addressed in two phases: a first phase would address clean energy supply goods and services, starting with solar, wind, small hydro and

⁹¹ http://www.cuts-citee.org/pdf/Briefing_Paper13-Geneva_Consensus_for_Trade_Multilateralism.pdf

⁹² ICTSD (2011), “Fostering Low Carbon Growth: The Case for a Sustainable Energy Trade Agreement”, ICTSD Global Platform on Climate Change, Trade and Sustainable Energy, <http://ictsd.org/downloads/2011/12/fostering-lowcarbon-growth-the-case-for-a-sustainable-energy-trade-agreement1.pdf>

biomass and eventually extending to marine, geothermal, clean coal, and transport related biofuels; and a second phase could address the wider scope of energy efficiency products and standards, buildings and construction, transportation, and manufacturing. Such an agreement could be conceived within the WTO framework as a stand-alone plurilateral agreement similar to the Government Procurement Agreement (GPA) or, it could extend concessions on an MFN basis to all WTO Members, similar to the Information Technology Agreement (ITA), with such an extension conditional on the accession of a “critical mass” of members based on different trade, climate, or energy-related criteria. Alternatively, SETA could be conceived as a stand-alone plurilateral agreement outside of the WTO, open to other non-WTO Members (with the possibility of eventually incorporating such an agreement into the WTO framework at some point in the future).⁹³

ICTSD’s proposal of a plurilateral agreement on sustainable energy is in line with the suggestions made by CSEND experts. Prof. Saner proposed to bundle three sectors which have so far been treated as separated negotiation for a tri-sector plurilateral agreement namely a) energy (goods and services), b) environment (goods and services) and c) trade and development (Aid-for-Trade, Enhanced Integrated Framework, TRTAs).⁹⁴ On the other hand, the plurilateral approach to the negotiation of new agreements within the WTO has also been proposed by CSEND experts, suggesting that plurilateral agreements might constitute a solution to the

impasse of WTO/DDA as well as a basis for future trade agreements within the WTO context.⁹⁵

The **International Institute for Sustainable Development (IISD)** works on climate change, energy, technology, and trade and investment, among other issues. The handbook on “Investment Treaties and Why They Matter to Sustainable Development: Questions and answers”⁹⁶ focuses on international treaties that guarantee standards of treatment for foreign investors. According to this publication,

“Today, there are literally thousands of investment treaties between governments, and many more are signed every year. Historically, developed countries pushed the agreements in order to provide an extra measure of legal protection to their domestic investors who sought to invest in riskier foreign territories abroad. Developing countries, a number of which were long resistant to certain principles and concepts embodied in the agreements, then incorporated them into their strategies for attracting foreign investment and capital into their territories. Developments over the past two decades have shown these to be powerful instruments, which play a big part in defining the relationship between host states and foreign investors. However, in their current form, they do little to promote sustainable development.”

The handbook discusses governance for sustainable development issues, addressing WTO aspects related to investment but making no reference at all to the UNFCCC framework.

⁹³ Others have proposed an agreement on the removal of energy and forestry subsidies and at the same time push for a greater commitment to the fight against climate change and global warming. See de Moor, A. (2001), “Towards a Grand Deal on Subsidies and Climate Change”, RIVM Netherlands Institute of Public Health and the Environment, <http://pblweb10.prolocation.net/sites/default/files/cms/publicaties/subsidiesclimchange.pdf>

⁹⁴ Saner (2011), “International governance options to strengthen WTO and UNFCCC”, CSEND Policy Brief No.3, available from http://www.diplomacydialogue.org/component/docman/doc_download/109-20110611-international-governance-options-to-strengthen-wto-and-unfccc.pdf

⁹⁵ CSEND (2012), “Plurilateral Agreements: Key to solving impasse of WTO/Doha Round and basis for future trade agreements within the WTO context”, CSEND Policy Brief No.7, available from http://www.csend.org/site-1.5/images/files/CSEND_Policy_Brief_Nr_7_Plurilaterals_April_2012_1.pdf

⁹⁶ Bernasconi-Osterwalder, N., Cosbey, A., Johnson, L. & Visdunbar, D. (2012), “Investment Treaties and Why They Matter to Sustainable Development: Questions and answers”, International institute for sustainable development, available from (<http://www.iisd.org/publications/pub.aspx?pno=1534>)

Another publication by IISD focuses on “The Future of Sustainable Development: Rethinking sustainable development after Rio+20 and implications for UNEP”. It is a product of IISD’s “Environment and Governance Project” and addresses questions like: Why is sustainable development not “selling”? How might we re- envision the concept for the world of today? And, what does this imply for organizations like the United Nations Environment Programme (UNEP), whose mission both contributes to, and depends on, the realization of sustainable development?. Below are transcribed some of the ideas highlighted by this publication.⁹⁷

“The incremental actions that have been agreed in repeated international meetings, even had they been quickly and fully implemented, fall far short of what is required to move the world onto a trajectory to sustainable development. The inadequacy of incremental progress is a fact in most areas of development, whether in terms of equity, social justice, climate change or biodiversity conservation. Rio+20 did not change any of this, but it nevertheless served a purpose: to underline the fact that we can no longer rely principally on an approach centred on global summits, universal agreements and independent commissions. In short, the notion that state-centric talk-fests will bring forth the leadership for meaningful change lies discredited.” (pp. 2-3)

“Whatever we call it (and recently we have tended to speak of a “green and inclusive economy”), sustainable development will never advance unless the economy serves as its motor. The challenge for the transition is to define in much more detail what kind of markets we consider to be sustainable and how to

make the necessary changes politically possible.

If we assume that decoupling will happen, then the first suite of enabling policies is relatively well advanced, at least in its outline, and ready for implementation. We must reform and phase-out subsidies that lead to overconsumption of carbon-based fuels. We must use the purchasing power of the public sector to favour sustainably produced and delivered goods and services. And we must use taxation policy to encourage sustainable behaviour and discourage the unsustainable—for example, taxing “bads” like financial speculation, pollution or waste rather than “goods” like employment.” (p.8)

It is worth mentioning that, although the publication focuses on the implications for UNEP of rethinking sustainable development after Rio+20, there is no mention made at all to UNEP’s current and future relation and work with WTO and / or UNFCCC.

The **Overseas Development Institute (ODI)** analyzed low-carbon investment opportunities for low income countries. Some of the main conclusions of ODI’s research in regards to low-carbon competitiveness are reproduced below.⁹⁸

“[T]he changes in competitiveness patterns generated are likely to have implications for low carbon growth. For example:

(1) Increasing natural resource scarcity – particularly relating to energy, land and water, and partly driven by economic growth in the emerging economies – will result in (for example)

- higher oil prices, reducing the competitiveness of energy-intensive industries in oil importing countries, which*

⁹⁷ Halle, M., Najam, .A., Beaton, C. (2013), “The Future of Sustainable Development: Rethinking sustainable development after Rio+20 and implications for UNEP”, International institute for sustainable development, available from http://www.iisd.org/pdf/2013/future_rethinking_sd.pdf

⁹⁸ Ellis, Karen (2013), “Low carbon competitiveness: Analysing opportunities and threats for low-income countries, and the business case for low carbon investment”, ODI Working Paper 368, <http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8282.pdf>, pp. 1-2.

could enhance incentives for energy-efficiency measures in those countries;

- increased competition for land and water, which could strengthen incentives for effective natural resource management and sustainable agricultural practices that improve land and labour productivity.

(2) Mitigation policies introduced at the global level or by trading partners, which may affect export opportunities or import prices faced by developing countries, could result in (for example)

- new standards requiring carbon footprinting of production in some sectors, potentially reducing access to markets for relatively energy-intensive products or products which are not certified;

- carbon taxation, which could lead to certain energy-intensive industries shifting to non-mitigating countries (often termed 'carbon leakage'), generating a possible trade-off between competitiveness and low carbon growth;

- increased climate finance to support the development of new green industries such as renewables (most likely from public funding sources in the short term, in the absence of well-functioning carbon markets).

(3) The impact of climate change – in the sense of planetary warming – will be significant for some sectors; for example:

- It will reduce yields/productivity of certain agricultural crops, undermining competitiveness of those products.

- It is reducing the efficacy of certain renewable energy sources, such as hydropower, in certain contexts, undermining the competitiveness of countries reliant on them.

- It threatens the prospects for tourism development by increasing the incidence of extreme weather events and reducing water supplies.”

“... [T]he carbon market is currently foundering, with very low prices

undermining returns and reducing the demand for carbon credits, so carbon finance for LICs through these mechanisms is currently not promising. Things may improve over time as international mitigation gathers pace, but in the short to medium term this looks more likely to happen through unilateral, perhaps regional, approaches rather than through an internationally coordinated climate change agreement and carbon market. ... Thus, efforts to develop the mechanisms in LICs to support access to carbon markets have not generated the hoped-for benefits and are unlikely to do so for a while. A switch in focus is required towards supporting other drivers of low carbon outcomes – such as the competitiveness drivers we discuss in this report. LICs are also more likely than MICs to benefit from public sources of climate finance, and can position themselves to better access these kinds of funds through a low carbon growth framing for their development strategy.” (p.3)

Although this publication contains a whole section on energy issues, only a few references are made to the WTO and UNFCCC frameworks, as well as to issues like technology transfer, directly linked to low-carbon competitiveness.

The **Center for International Environmental Law**⁹⁹ published a report asking the question on whether world trade law is a barrier to saving our climate. Unlike other publications revised in this session, this work considers both the WTO and the UNFCCC frameworks when answering the question about world trade law and climate change. The main conclusions are transcribed below.

“This paper has addressed questions regarding the consistency with WTO rules and jurisprudence of a number of measures that countries are taking or may take to address climate change. For example, the paper analyzes questions relating to labels and standards, fuel efficiency schemes, border carbon adjustments, and green subsidies. The

⁹⁹ <http://www.ciel.org/>

paper has generally concluded that current WTO rules provide adequate flexibility to accommodate properly designed and implemented climate measures. Thus WTO rules should not be used as a justification for delaying action to address climate change either in national debates or international negotiations.

On the contrary, the international climate negotiations due to conclude in Copenhagen in late 2009 can help ensure greater coherence between trade law and climate actions. For example, the Copenhagen outcome can clarify that the measures described in this paper are vitally necessary to address climate change and thus help ensure that WTO rules will not impede national efforts to solve the climate crisis.

That said, it is important to note that this paper is not exhaustive: it does not pretend to address all the issues involved at the nexus of climate and trade policy. It considers the WTO compatibility of only certain climate measures. There are other climate measures, such as green procurement, that could have trade impacts and thus, will require analysis of their compatibility with existing WTO rules. Nor does the paper address the specialized area of intellectual property rules and their relation to the development and transfer of climate friendly technologies.

In addition, the WTO is not the only body of trade law that could impinge on climate change policies. For example, regional and bilateral Free Trade Agreements may also be relevant. Similarly, investment treaties may have an impact on the regulation of climate-related investments. Finally, the use of trade sanctions as part of an international enforcement or compliance regime has been mentioned only in passing and has not been

comprehensively examined in this paper.”¹⁰⁰

On the other hand, the current United States **President Barack Obama** has recently made public his proposals to reduce greenhouse gas emissions. Below are transcribed some of his words reflected by the media.

“The question now is whether we will have the courage to act before it is too late...

...As a president, as a father and as an American, I am here to say, we need to act...

...I refuse to condemn your generation and future generations to a planet that’s beyond fixing.”¹⁰¹

Mr. Obama recommitted his country to meeting the target he set in 2009 of reducing greenhouse gas emissions by 17 percent below 2005 levels by 2020. According to The New York Times,

“Thanks to the recession, improved energy efficiency and a shift from coal to natural gas, carbon dioxide emissions have fallen by about 11 percent since 2005. But that trend line is flattening, and the policy steps outlined in the president’s plan are clearly timely.

The most important of these is a proposal to use government’s authority under the Clean Air Act to regulate emissions from existing coal- and gas-fired power plants, which account for about 40 percent of the country’s carbon pollution. This will require substantial investments in efficiency and renewable sources by industry and the states, and it must be

¹⁰⁰ Bernasconi-Osterwalderand, N. and J. Norpoth. (2009), “Is world trade law a barrier to saving our climate? questions and answers”, CIEL,

http://ciel.org/Publications/ClimateTradeReport_foe-ciel_sep09.pdf, pp.30-31

¹⁰¹ <http://mobile.nytimes.com/2013/06/26/us/politics/obama-plan-to-cut-greenhouse-gases.html?from=homepage>

carefully tailored to withstand possible legal challenges from both.”¹⁰²

At the international level, Mr. Obama proposed to do more to prevent deforestation, and to pursue agreements with China and others to phase out refrigerants known as hydrofluorocarbons. It is important to highlight that the Climate Action Plan makes reference to both the UNFCCC and the WTO. In regards to negotiating global free trade in Environmental Goods and Services, the proposal reads as follows:

“The U.S. will work with trading partners to launch negotiations at the World Trade Organization towards global free trade in environmental goods, including clean energy technologies such as solar, wind, hydro and geothermal. The U.S. will build on the consensus it recently forged among the 21 Asia-Pacific Economic Cooperation (APEC) economies in this area. In 2011, APEC economies agreed to reduce tariffs to 5 percent or less by 2015 on a negotiated list of 54 environmental goods. The 20 APEC list will serve as a foundation for a global agreement in the WTO, with participating countries expanding the scope by adding products of interest. Over the next year, we will work towards securing participation of countries which account for 90 percent of global trade in environmental goods, representing roughly \$481 billion in annual environmental goods trade. We will also work in the Trade in Services Agreement negotiations towards achieving free trade in environmental services.”¹⁰³

¹⁰² The New York Times (2013), “At Last, an Action Plan on Climate”, Editorial, <http://www.nytimes.com/2013/06/26/opinion/at-last-an-action-plan-on-climate.html?pagewanted=print>

¹⁰³ The official document containing Obama’s proposal is available from <http://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf>. The document focuses on: cutting carbon pollution in America, preparing the United States for the impacts of climate change, and lead international efforts to address climate change.pp.19-20.

Furthermore, the former United States **Vice President Al Gore** has supported the idea of a carbon tax. In his blog, the Former Vice President reproduced an editorial published by the Financial Times. Some of the main references are reproduced below.¹⁰⁴

“Yet a carbon tax, which has all those characteristics, is struggling to find support from the US administration or in Congress. It deserves much wider enthusiasm.”

“One of the few uncontroversial conclusions of economics is that it is better to tax “bads” than “goods”. Wages and profits are desirable objectives, and governments have no good excuse for obstructing them. They are taxed largely for reasons of convenience, at the cost of disincentives to wage-earning and profit making that are a drag on the economy.”

“Energy consumption, on the other hand, is not an objective for anyone. Indeed, the negative externalities of energy use, including local pollution and greenhouse gas emissions, mean that, other things being equal, an economy that burns less fuel is better off.”

“That insight lies behind support from across the political spectrum for a tax linked to the carbon content of fossil fuels, generating revenue that could be recycled through cuts in other taxes. Four leading Democrats in Congress this month proposed such a tax, and asked for suggestions for how it could be implemented. On the Republican side, a carbon tax has been backed by several prominent figures, most notably Greg Mankiw of Harvard, a former economic adviser to George W. Bush and Mitt Romney.”

“Carbon taxes have their drawbacks, it is true, but their problems are mostly fixable.

¹⁰⁴

http://blog.algore.com/2013/03/time_has_come_for_a_carbon_tax.html

They are regressive, but that could be offset by changes to other taxes. They can create difficulties for energy-intensive sectors, but those could be eased with targeted reliefs."

It is worth mentioning that the implementation of a carbon tax would directly affect WTO rules and disciplines. The editorial by the Financial Times does not make any reference at all to them.

The **Global Leadership for Climate Action (GLCA)** is a high-level task force of world leaders committed to addressing climate change through international negotiations. A joint initiative of the United Nations Foundation and the Club of Madrid, GLCA consists of former heads of state and government as well as leaders in business, government, and civil society from more than 20 countries. GLCA released a paper in 2009 focusing on climate change adaptation and highlighting its links to development and poverty alleviation, with emphasis on action at the local level. Three of the main recommendations are listed below:¹⁰⁵

"We recommend that the Secretary-General of the United Nations establish an independent high-level task force to define a new vision for global sustainable development based on a low-carbon economy and to address the ability of global public policy and global governance to deal concurrently with the crises the world has witnessed in recent years."

"In the longer term, we recommend that a climate fund (or funding mechanism) be established in the context of a new and comprehensive climate agreement to support developing countries' actions related to mitigation and adaptation. It should include both public and private resources, starting at US\$10 billion and growing to \$50 billion per year. It should

¹⁰⁵ Global Leadership for Climate Action (2009), "Facilitating an International Agreement on Climate Change: Adaptation to Climate Change", http://www.unfoundation.org/assets/pdf/adaptation_to_climate_change.pdf, pp.7-9

have an innovative structure and governance that is transparent and inclusive. In addition to ODA, it should consist of innovative and predictable sources of finance, including auction revenues from greenhouse gas markets and global market-based levies—for example, on international air travel and maritime freight transportation."

"To improve coordination and reduce duplication of effort, UN agencies should seek to 'deliver as one' at the country level, as recommended by the UN High-Level Panel on System-Wide Coherence."

Although the GLCA paper addresses the issue of facilitating an international agreement on climate change, the publication does not include any reference at all in regards to the WTO framework, TRIPS, TRIMS and technology transfer.

The academic field has also proposed different initiatives to fight climate change. **Dieter Helm**, professor of energy policy at the University of Oxford suggests that given the failure of UN climate talks, a **carbon consumption tax** would be the most effective way of lowering emissions. Below are transcribed some of his thoughts.¹⁰⁶

"The main reason emissions have been going up is the rise of coal — in China, in particular. Coal is now the source of 30 percent of the world's energy, up from about 25 percent in the mid-1990s. Europe's initiatives have had no effect on China's policies or the global coal burn. Indeed, the initiatives have probably made the situation worse. As the price of energy has increased using current renewables, energy-intensive industries are being driven offshore, only for their products to be imported back into the European Union."

"By the standards of the Kyoto accord, Europe looks good. But those standards

¹⁰⁶ <http://www.guardian.co.uk/environment/2012/nov/08/kyoto-climate-change-carbon-tax> and <http://www.nytimes.com/2012/11/12/opinion/on-climate-change-the-us-is-doing-better-than-europe.html>

measure each country's production — not consumption — of carbon. This has created counterproductive incentives. If steel plants are closed in Britain and replaced by steel imports from China, Britain counts that as a success. Between 1990 and 2005, Britain's carbon production fell by about 15 percent — but its carbon consumption rose by 19 percent, when imports were counted. The rest of Europe has been deindustrializing too, and this has also encouraged energy-intensive production to move overseas."

"Contrast this with the United States, which declined to ratify the Kyoto agreement because China and other developing countries were not required to do much. America has only the crudest energy policy. And yet its carbon emissions have been falling sharply. Why? Because the United States is switching from coal to gas. At the same time, Europe is moving from gas, which is expensive there, to much more polluting coal — especially in Germany, which is phasing out its nuclear plants following the Fukushima disaster in Japan."

"Europe's "answer" to global warming is wind farms and other current renewables. But the numbers won't ever add up. It just isn't possible to reduce carbon emissions much with small-scale disaggregated wind turbines. There isn't enough land for biofuels, even if corn-based ethanol were a good idea (a questionable proposition). Current renewable-energy sources cannot bridge the gap if we are to move away from carbon-intensive energy production. So we will need new technologies while in the meantime slowing the coal juggernaut."

"There are three sensible ways to do this: tax carbon consumption (including imports); accelerate the switch from coal to gas; and support and finance new technologies rather than pouring so much money into wind and biofuels."

The implementation of the policy suggestions recommendations made by Prof. Helm would directly impact WTO rules and disciplines. This impact is not covered by his analysis.

Professor Raymond Saner also proposed the **adoption of a carbon tax to fight climate change**. Some of his main recommendations are reproduced below.

"Disappointed and angry about the failure of the Copenhagen meeting last year, politicians in the United States and the European Union attribute the cause of the failure to the unwillingness of mainly China and India (key emitters of CO₂) to commit to legally binding reductions of their total CO₂ emissions within the UNFCCC context. Three policy options have been proposed namely:

BTADU: Border Tax Adjustment based on Domestic Unrestricted Carbon Content

BTAFU: Border Tax Adjustment based on Foreign Unrestricted Carbon Content

BTADE: Scenario Efficient Border Tax Adjustment

The intention of such carbon tax would be to ensure competitiveness of producers from countries with high carbon taxes and enforced CC rules in contrast to producers from countries with lax or no CO₂ emission controls who could undercut their competition with lower prices (free of carbon tax). India has reacted strongly to such carbon tax proposals and threatened to take countries that would use such carbon taxes to the WTO dispute settlement forum.

Other trade policy option could be the use of domestic and export subsidies to provide competitive advantage to local companies or the use of various forms of environmental standards. These environmental standards could have both

positive and negative effects on CO2 depending whether they are used by WTO member countries as means to protect local companies from foreign competitors or whether they are intended to raise the level of carbon reduction at global, that is, non-discriminatory levels without causing harm (loss of competitive advantage) to other economic actors. Subsidization could on the other hand lead to imposition of countervailing duties and subsequently to a long drawn out litigation through the WTO dispute settlement process.

Firm location decisions might be influenced by carbon leakage considerations. Production could be considered less costly in a country where emissions are unabated versus a country where emissions are reduced through carbon constraining policies. Such policies in turn can lead to higher production costs and loss of competitiveness, hence could lead to off shoring and loss of jobs and investment.

Trade experts are worried that if governments cannot come to an agreement on rights and obligations within a climate change regime (UNFCCC), then the chances increase dramatically of countries with carbon reduction policies using trade measures to counter perceived unfair price advantages by firms from countries with low carbon reduction policies. Such trade based CC measures would be contested especially by large emerging countries like India and China who would bring the WTO litigation system into a battleground inflicting damages to both sides of the litigation divide and, most importantly and by so doing inflicting potentially irreversible damage to the common good of environmental sustainability.”¹⁰⁷

All in all, the different initiatives listed in this section show that there is a new thinking emerging which suggests the need to bring back to the multilateral discussions issues like investment and competition as well as the need to rethink cross-regime approaches involving trade, investment and climate change. In conclusion, the references presented above are different appeals to reconsider TRIMS in the form of a pro-green / Low carbon enhancing FDI. In other words, majority of suggested solutions to climate warming would affect, or better, would need to include rules and disciplines of the WTO.

¹⁰⁷ Saner (2011), “International governance options to strengthen WTO and UNFCCC”, <http://www.diplomacydialogue.org/publications/environmental->

[diplomacy/101-international-governance-options-to-strengthen-wto-and-unfccc](http://www.diplomacydialogue.org/publications/environmental-diplomacy/101-international-governance-options-to-strengthen-wto-and-unfccc)

Chapter 4

WTO Dispute Settlement Cases Pertaining to Environment

Main message:

WTO Dispute Settlement cases already exist and have been adjudicated. More can be done proactively (see next sections of this policy paper).

The previous section highlighted the need to bring back to the multilateral discussions issues like investment and competition as well as the need to rethink cross-regime approaches involving trade, investment and climate change. This approach requires a reconsideration of TRIMS in the form of a pro-green / low carbon enhancing FDI, but also a reconsideration of TRIPS in the form of an adoption of a “compulsory licensing” clause to support transfer of green technologies in developing and least developed countries.

The WTO Dispute Settlement Mechanism has dealt with cases pertaining to environment. There were three main environmental disputes under the WTO.¹⁰⁸

In the case “**European Communities — Measures affecting asbestos and asbestos-containing products**” of 2001, both the Panel and the Appellate Body rejected Canada's challenge to France import ban on asbestos and asbestos-containing products, reinforcing the view that the WTO Agreements support members' ability to protect human health and safety at the level of protection they deem appropriate.¹⁰⁹

Following

The summary of the key Panel /Appellate Body findings are reproduced below:

“TBT Annex 1.1 (technical regulation): The Appellate Body, having rejected the Panel's approach of separating the measure into the ban and the exceptions, reversed the Panel and concluded that

the ban as an “integrated whole” was a “technical regulation” as defined in Annex 1.1 and thus covered by the TBT Agreement, as (i) the products subject to the ban were identifiable (i.e. any products containing asbestos); (ii) the measure was a whole laid down product characteristics; and (iii) compliance with the measure was mandatory. However, the Appellate Body did not complete the legal analysis of Canada's TBT claims as it did not have an “adequate basis” upon which to examine them.

GATT Art. III:4 (national treatment - domestic laws and regulations): As the Appellate Body found the Panel's likeness analysis between asbestos and PCG fibres and between cement-based products containing asbestos and those containing PCG fibres insufficient, it reversed the Panel's findings that the products at issue were like and that the measure was inconsistent with Art. III:4. (The Appellate Body emphasized a competitive relationship between products as an important factor in determining likeness in the context of Art. III:4 (c.f. separate concurring opinion by one Appellate Body Member.) Then, having completed the like product analysis, the Appellate Body concluded that Canada had failed to demonstrate the likeness between either set of products, and, thus, to prove that the measure was inconsistent with Art. III:4.

¹⁰⁸ See Annex 1 for list of environmental disputes under WTO and GATT.

¹⁰⁹ http://www.wto.org/english/tratop_e/envir_e/edis09_e.htm

GATT Art. XX(b) (general exceptions - necessary to protect human life or health): Having agreed with the

Panel that the measure "protects human life or health" and that "no reasonably available alternative measure" existed, the Appellate Body upheld the Panel's finding that the ban was justified as an exception under Art. XX(b). The Panel also found that the measure satisfied the conditions of the Art. XX chapeau, as the measure neither led to arbitrary or unjustifiable discrimination, nor constituted a disguised restriction on international trade."¹¹⁰

The "shrimp-turtle" case of 2001, "**United States — Import Prohibition of Certain Shrimp and Shrimp Products**" recognized that under WTO rules governments have every right to protect human, animal or plant life and health and to take measures to conserve exhaustible resources. The WTO does not have to "allow" them this right. Initially, the US lost the case because it applied its import measures in a discriminatory manner; it then revised its measures to introduce flexibilities in favour of developing countries. The Appellate Body subsequently concluded that the US ban was consistent with WTO rules. The ruling also said WTO panels may accept "amicus briefs" (friends of the court submissions) from NGOs or other interested parties.¹¹¹

The summary of the key Panel /Appellate Body findings are reproduced below:

"GATT Art. XI (prohibition on quantitative restrictions): The Panel found that the US prohibition, based on Section 609, on imported shrimp and shrimp products violated Art. XI. The United States apparently conceded the measure's violation of Art. XI because it did not put forward any defending arguments in this regard.

¹¹⁰ ¹¹⁰ WTO (2012), "WTO Dispute Settlement: One-Page Case Summaries 1995 – 2011", http://www.wto.org/english/res_e/booksp_e/dispu_summary95_11_e.pdf, p. 54

¹¹¹ http://www.wto.org/english/tratop_e/envir_e/edis08_e.htm

GATT Art. XX(g) (general exceptions - exhaustible natural resources): The Appellate Body held that although the US import ban was related to the conservation of exhaustible natural resources and, thus, covered by Art. XX(g) exception, it could not be justified under Art. XX because the ban constituted "arbitrary and unjustifiable" discrimination under the chapeau of Art. XX. In reaching this conclusion, the Appellate Body reasoned, inter alia, that in its application the measure was "unjustifiably" discriminatory because of its intended and actual coercive effect on the specific policy decisions made by foreign governments that were Members of the WTO. The measure also constituted "arbitrary" discrimination because of the rigidity and inflexibility in its application, and the lack of transparency and procedural fairness in the administration of trade regulations.

While ultimately reaching the same finding on Art. XX as the Panel, the Appellate Body, however, reversed the Panel's legal interpretation of Art. XX with respect to the proper sequence of steps in analysing Art. XX. The proper sequence of steps is to first assess whether a measure can be provisionally justified as one of the categories under paras. (a)-(j), and, then, to further appraise the same measure under the Art. XX chapeau."¹¹²

The "**United States — Standards for Reformulated and Conventional Gasoline**" of 1996 affirmed that the US had every right to adopt the highest possible standard to protect its air quality so long as it did not discriminate against foreign imports. The US lost the case because it discriminated — its requirement on domestic producers was less stringent than that imposed on imported gasoline (in this case from Venezuela

¹¹² WTO (2012), "WTO Dispute Settlement: One-Page Case Summaries 1995 – 2011", http://www.wto.org/english/res_e/booksp_e/dispu_summary95_11_e.pdf, p. 27

and Brazil).¹¹³ The Appellate Body in US — Gasoline emphasized the importance of the Preamble of the WTO Agreement in the context of environmental issues:

*“Indeed, in the preamble to the WTO Agreement and in the Decision on Trade and Environment, there is specific acknowledgement to be found about the importance of coordinating policies on trade and the environment. WTO Members have a large measure of autonomy to determine their own policies on the environment (including its relationship with trade), their environmental objectives and the environmental legislation they enact and implement. So far as concerns the WTO, that autonomy is circumscribed only by the need to respect the requirements of the General Agreement and the other covered agreements.”*¹¹⁴

The summary of the key Panel /Appellate Body findings are reproduced below:

“GATT Art. III:4 (national treatment - domestic laws and regulations): The Panel found that the measure treated imported gasoline “less favourably” than domestic gasoline in violation of Art. III:4, as imported gasoline effectively experienced less favourable sales conditions than those afforded to domestic gasoline. In particular, under the regulation, importers had to adapt to an average standard, i.e. “statutory baseline”, that had no connection to the particular gasoline imported, while refiners of domestic gasoline had only to meet a standard linked to their own product in 1990, i.e. individual refinery baseline.

*GATT Art. XX(g) (general exceptions - exhaustible natural resources): In respect of the US defence under Art. XX(g), the Appellate Body modified the Panel's reasoning and found that the measure was “related to” (i.e. “primarily aimed at”) the “conservation of exhaustible natural resources” and thus fell within the scope of Art. XX(g). However, the measure was still not justified by Art. XX because the discriminatory aspect of the measure constituted “unjustifiable discrimination” and a “disguised restriction on international trade” under the chapeau of Art. XX.”*¹¹⁵

In regards to TRIMS and TRIPS, so far, there were 36 cases citing the TRIMS agreement in the request for consultations while there were 33 cases citing TRIPS. In both cases, developed and developing countries were involved either as complainant or as a respondent. Annex 2 and 3 show a list of cases involving TRIMS and TRIPS. It is also important to highlight that there was no case yet dealing with environmental services.

The great majority of the cases involved Article 2 (National Treatment and Quantitative Restrictions) of TRIMS. Article 3 (Exceptions) has not been cited in any dispute related to TRIMS. On the other hand, 7 cases cited Article 5 of TRIMS (Notification and Transitional Arrangements). The box below identifies the cases according to paragraphs of the TRIMS articles.

¹¹³ http://www.wto.org/english/tratop_e/envir_e/edis07_e.htm

¹¹⁴ Appellate Body Report, US — Gasoline, p. 30

¹¹⁵ WTO (2012), “WTO Dispute Settlement: One-Page Case Summaries 1995 – 2011”,

http://www.wto.org/english/res_e/booksp_e/dispu_summary95_11_e.pdf, p. 7

Box 7: Breakdown of cases by article of TRIMS

Article 2	26 case(s): DS27 , DS51 , DS52 , DS54 , DS55 , DS59 , DS64 , DS65 , DS74 , DS81 , DS102 , DS105 , DS139 , DS142 , DS146 , DS175 , DS224 , DS276 , DS340 , DS342 , DS358 , DS359 , DS438 , DS444 , DS445 , DS446
Article 2.1	15 case(s): DS142 , DS175 , DS195 , DS275 , DS334 , DS339 , DS340 , DS342 , DS358 , DS359 , DS412 , DS426 , DS443 , DS452 , DS456
Article 2.2	5 case(s): DS175 , DS195 , DS339 , DS443 , DS452
Article 5	4 case(s): DS27 , DS74 , DS102 , DS105
Article 5.2	1 case(s): DS195
Article 5.4	1 case(s): DS55
Article 5.5	1 case(s): DS195
Article 6	1 case(s): DS446
Article 6.1	1 case(s): DS445
Annex 1	3 case(s): DS334 , DS358 , DS359

Source: WTO website, http://www.wto.org/english/tratop_e/dispu_e/dispu_agreements_index_e.htm?id=A25#selected_agreement

Finally, the Appellate Body recently issued its reports on two cases related to renewable energy. On 6 May 2013, the WTO Appellate Body issued its reports in the cases “**Canada – Certain Measures Affecting the Renewable Energy Generation Sector**” (DS412) and “**Canada – Measures Relating to the Feed in Tariff Program**” (DS426), respectively.¹¹⁶ Furthermore, there are other disputes involving sectors which are very relevant for fighting climate change such as environmental charge, solar energy, solar panels, and wind power equipment. Below are listed the WTO cases related to these sectors. This section highlighted legal cases related to renewable energy products. However, it is important to note that the fact that those products have been covered by WTO

jurisprudence is a mere coincidence. The issue at stake was not the product’s environmental nature but rather the fact that, in trying to promote them, governments used commercial measures that upset the level playing field for exports that should exist without discrimination against foreign trading partners.

The cases reviewed in this section indicate that extremely relevant sectors for fighting climate change such as renewable energy, solar energy, solar panels and wind power equipment have been covered by the WTO jurisprudence.

¹¹⁶

http://www.wto.org/english/news_e/news13_e/412_426abr_e.htm

Box 8: WTO cases related to environmental charge, solar energy, solar panels, and wind power equipment

Biodiesels:

DS443 European Union and a Member State — **Certain Measures Concerning the Importation of Biodiesels** (Complainant: Argentina)

Environmental Charge:

DS421 Moldova, Republic of — **Measures Affecting the Importation and Internal Sale of Goods (Environmental Charge)** (Complainant: Ukraine) 17 February 2011

Solar Energy:

DS456 India — **Certain Measures Relating to Solar Cells and Solar Modules** (Complainant: United States) 6 February 2013

Solar Panels:

DS437 United States — **Countervailing Duty Measures on Certain Products from China** (Complainant: China) 25 May 2012

Wind Power Equipment:

DS419 China — **Measures concerning wind power equipment** (Complainant: United States) 22 December 2010

DS437 United States — **Countervailing Duty Measures on Certain Products from China** (Complainant: China) 25 May 2012

Source: WTO Index of disputes issues, http://www.wto.org/english/tratop_e/dispu_e/dispu_subjects_index_e.htm

There has also been case law citing the TRIMS Agreement. There is need to further analyze the jurisprudence in order to find arguments to support the implementation at the national level of measures fostering low carbon investment and low carbon production (focusing on the measures listed in the Annex of the Agreement, i.e. local

content requirements). Likewise, there has been case law citing TRIPS provisions which are relevant for the implementation of measures supporting low carbon investment and low carbon production. There is a need to further analyze these cases in order to find and deepen the legal arguments around compulsory licensing, technology transfer, etc.

Box 9: Are different energy products “like products” to be treated equally?

The classic GATT statement on the factors to consider in deciding whether two products are “like products” – and should therefore be treated equally — is found in a GATT working party report of 1970. That report states in respect of “like or similar products”:

“[t]he interpretation of the term should be examined on a case-by-case basis. This would allow a fair assessment in each case of the different elements that constitute a ‘similar’ product. Some criteria were suggested for determining, on a case-by-case basis, whether a product is ‘similar’: the product’s end-uses in a given market; consumers’ tastes and habits, which change from country to country; the product’s properties, nature and quality” (Working Party Report on Border Tax Adjustments, adopted on 2 December 1970, BISD 18S/97, para. 18, emphasis added).

It should be noted also that the term “like product” is found in several WTO provisions but may not have the same meaning in each of these provisions. As the Appellate Body noted: “The concept of ‘likeness’ is a relative one that evokes the image of an accordion. The accordion of ‘likeness’ stretches and squeezes in different places as different provisions of the WTO Agreement are applied” (Japan – Alcoholic Beverages, WT/DS8/AB/R, adopted on 1 November 1996, para. 114. See also para. 66 below). The issue of likeness under Art. III (national treatment) is further addressed below (para. 66).

The most notorious GATT dispute that addressed this question of “likeness” under the MFN principle involved coffee (Panel Report on Spain – Tariff Treatment of Unroasted Coffee, adopted on 11 June 1981, BISD 28S/102). In that case, Spain had split its single tariff line for coffee into five tariff lines for different types of coffee, dutiable at two different rates. The effect of the change was apparently to lead to comparatively higher duties on stronger coffee beans. Brazil, which considered itself to have been adversely affected by this reclassification, brought a case against Spain. The panel ruled that unroasted coffee is unroasted coffee, i.e. that it was not possible to distinguish between types of unroasted coffees for tariff purposes. Factors such as differences in taste and aroma resulting from the geographical origin of the coffee, cultivation methods and processing of the beans as well as genetic factors, were not considered to be sufficient to make the products “not like”. Spain was thus obliged to impose the same duty on (stronger) Brazilian coffee and (weaker) coffee from other countries.

It is generally accepted, however, that the method of tariff classification can be used as one of the elements to determine whether products are “like”. It would thus seem fair to state that given their different tariff classification, as well as different “properties, nature and quality”, electricity is not “like” natural gas nor is nuclear energy “like” coal (notwithstanding their similar enduses). It would, therefore, seem possible for ECT Contracting Parties to treat, say, electricity from the EC differently than natural gas from Kazakhstan.

A problem could arise, however, in case an ECT Contracting Party were to impose different custom duties for different types of electricity depending, for example, on how the electricity has been generated (e.g., by nuclear power or renewable sources). There, not only the end-use (and, most probably, tariff classification) but also the physical characteristics of the two products would be identical. It would be impossible to physically distinguish the two. They would, therefore, stand a serious chance of being considered to be “like”. If so, any differential treatment would be a violation of the MFN-principle. We will explain below that such violation may be justified under Article XX of GATT for reasons of health or environmental protection.

Source: Energy Charter Secretariat (2001), “WTO Rules Applying under the Energy Charter Treaty”, http://www.encharter.org/fileadmin/user_upload/document/WTO_Rules_applying_to_the_ECT_-_2002_-_ENG.pdf, p.21.

In conclusion, WTO Dispute Settlement cases already exist and have been adjudicated. More can be done proactively in order to explore legal arguments to support a green approach to TRIMS and TRIPS that would help developing and least developed countries foster low carbon investment and production to fight climate warming. In practice, even though there have been a number

of cases involving measures derived from MEAs (the use of some of measures has been criticized either by panels or the Appellate Body), it should be stressed that what was criticized was not the measures themselves but rather the manner in which they were applied by the respective governments. In that sense, the ability of WTO Members to implement measures derived from MEAs has been fully preserved.

Chapter 5

Green TRIMS+

Main message:

there has been case law citing the TRIMS Agreement. There is need to further analyze the jurisprudence in order to find arguments to support the implementation at the national level of measures fostering low carbon investment and low carbon production (focusing on the measures listed in the Annex of the Agreement, i.e. local content requirements).

Prior to the Uruguay Round negotiations, the linkage between trade and investment received little attention in the framework of the GATT. In the late 1980s, before the creation of the WTO, there was an increase in foreign direct investment worldwide. Countries receiving foreign investment imposed numerous restrictions on investments to protect and foster domestic industries, and to prevent the outflow of foreign exchange reserves. Examples of these policies include local content requirements and trade balancing rules.

The TRIMS Agreement was negotiated during the Uruguay Round and applies only to measures that affect trade in goods and basically was intended to phase out previous local content requirements. Recognizing that certain investment measures designed by host countries can have trade-restrictive and distorting effects, it states that no Member shall apply a measure that is prohibited by the provisions of GATT Article III (national treatment) or Article XI (quantitative restrictions). The Annex of the Agreement contains an Illustrative list of examples of measures labelled as inconsistent including local content or trade balancing requirements. In addition, the TRIMS contains

“transitional arrangements allowing Members to maintain notified TRIMs for a limited time following the entry into force of the WTO (two years in the case of developed country Members, five years for developing country Members, and seven years for least-developed country Members).”¹¹⁷

The Agreement also

“establishes a Committee on TRIMs which will, among other things, monitor the implementation of these commitments. The agreement also provides for consideration, at a later date, of whether it should be complemented with provisions on investment and competition policy more broadly.”¹¹⁸

The Agreement annexes a list of TRIMs which are inconsistent with the obligation of national treatment provided for in paragraph 4 of Article III of GATT 1994 and the obligation of general elimination of quantitative restrictions provided for in paragraph 1 of Article XI of GATT 1994. The illustrative list is reproduced in the box below.

¹¹⁷ http://www.wto.org/english/tratop_e/invest_e/invest_e.htm

¹¹⁸ WTO website,

http://www.wto.org/english/docs_e/legal_e/ursum_e.htm#eAgreement

Box 10: TRIMS Annex Illustrative List of measures

1. TRIMS that are inconsistent with the obligation of national treatment provided for in paragraph 4 of Article III of GATT 1994 include those which are mandatory or enforceable under domestic law or under administrative rulings, or compliance with which is necessary to obtain an advantage, and which require:
 - (a) the purchase or use by an enterprise of products of domestic origin or from any domestic source, whether specified in terms of particular products, in terms of volume or value of products, or in terms of a proportion of volume or value of its local production; or
 - (b) that an enterprise's purchases or use of imported products be limited to an amount related to the volume or value of local products that it exports.

2. TRIMS that are inconsistent with the obligation of general elimination of quantitative restrictions provided for in paragraph 1 of Article XI of GATT 1994 include those which are mandatory or enforceable under domestic law or under administrative rulings, or compliance with which is necessary to obtain an advantage, and which restrict:
 - (a) the importation by an enterprise of products used in or related to its local production, generally or to an amount related to the volume or value of local production that it exports;
 - (b) the importation by an enterprise of products used in or related to its local production by restricting its access to foreign exchange to an amount related to the foreign exchange inflows attributable to the enterprise; or
 - (c) the exportation or sale for export by an enterprise of products, whether specified in terms of particular products, in terms of volume or value of products, or in terms of a proportion of volume or value of its local production.

Source: Agreement on Trade-Related Investment Measures, https://www.wto.org/english/docs_e/legal_e/18-trims_e.htm

The TRIMS articles are very relevant for green investment. As mentioned above, the adoption of the TRIMS Agreement implied the end of import substitution policies. After the Uruguay Round, the trade-related investment measures were phased out and countries were given transition periods to adjust their internal policies. As pointed out by a UNDESA, UNEP and UNCTAD report (2011; 48-49),

"[m]any 'new generation' IIAs, and the WTO TRIMS Agreement, also prohibit the use of so-called performance requirements. These are conditions of establishing an investment, or conditions for preferential treatment, that are linked to the use of domestic resources, to export performance, to technology transfer, and so on. The key question here is whether these sorts of policies are effective or ineffective at fostering economic development (in the present case we are concerned specifically about green development). If effective—and while there is no consensus, there is evidence that at least some sorts of performance requirements have worked—then these prohibitions are another way that investment law can constitute an obstacle to achieving a green economy... Investment law is a

valuable governing influence, allowing for greater investor certainty and potentially fostering more robust flows of investment to developing countries. But certain aspects of many of the agreements in force today may be problematic from the green economy perspective."¹¹⁹

The debate about TRIMS is an unfinished business since some countries are indirectly applying TRIMS measures. The practice (WTO DSM) shows that some TRIMS are still in practice.¹²⁰ Hence, the authors suggest that TRIMS could be re-considered for the purpose of low-carbon investment and green economy. The box below identifies the WTO impermissibility of local content requirements implemented in the renewable energy sector.

¹¹⁹ UNDESA, UNEP and UNCTAD (2011), Report by a Panel of Experts on "The Transition to a Green Economy: Benefits, Challenges and Risks from a Sustainable Development Perspective", http://www.unep.org/greeneconomy/Portals/88/documents/research_products/UN-DESA,%20UNCTAD%20Transition%20GE.pdf

¹²⁰ For a comprehensive analysis of the use of local content requirements in renewable energy policies see Kuntze, J.C. and Moerenhout, T. (2013), "Local Content Requirements And The Renewable Energy Industry - A Good Match?", ICTSD, http://unctad.org/meetings/en/Contribution/DITC_TED_13062013_Study_ICTSD.pdf, pp. 21-31

Box 11: WTO impermissibility of local content requirements

Overall, support schemes for RE development that contain LCRs likely violate various different WTO provisions. They are inconsistent with the national treatment principle in GATT Article III:4 – and potentially GATT Article III:5 – as they promise to advantage the RE producers that source locally manufactured or assembled products over others that do not. They might equally violate Articles 2.1 and 2.2 of the TRIMs Agreement, as this agreement explicitly prohibits trade-related investment measures that require “the purchase or use of products of domestic origin or from any domestic source” in order to obtain an advantage. For the SCM Agreement, the principal question is whether a support scheme qualifies as a “subsidy” under its specific requirements. If it does, the scheme would constitute a prohibited subsidy under Article 3.1(b) SCM Agreement as long as it was found to be “contingent (...) upon the use of domestic over imported goods.” GATT Article XX would likely not be available to justify support schemes with LCRs.

Contrary to support schemes with LCRs, procurement tenders containing LCRs would hardly be disciplined by WTO law. Public procurement is only subject to GATT Article III:8(a), which would most likely not apply to support schemes for renewable electricity (with LCRs), and the GPA, which relies on a positive list approach and therefore only binds the entities that were explicitly included into its scope of application by their host states.

Source: Kuntze, JC. and Moerenhout, T. (2013), p. 40.

There is a need for building productive capacity of low carbon production on a long term basis. However, some countries impose unilaterally countervailing and anti-dumping duties in response to other countries' policies on the grounds that they distort trade. In the case of promotion of renewable energy, numerous domestic incentives are used by governments. Following Bahar, Egeland and Steenblik (2012), many OECD countries have established national targets for renewable energy and are providing additional incentives to help boost the rate of penetration of renewable energy in their economies. In some jurisdictions, it is required to meet certain minimum levels of domestic content as a condition to have access to government support schemes. In addition, many domestic

incentives are both increasing the supply of renewable energy and facilitating trade in associated technologies and renewable fuels.¹²¹

As mentioned in section 3 of UNCTAD's World Investment Report 2010, the report focused on low-carbon investment and suggested different actions that have direct or indirect relation with the TRIMS and TIRPS agreements. The table below highlights some of the references made by the report and identifies its link to TRIMS and/or TRIPS agreements. This identification is based on the proposals made by Prof. Saner to foster effective governance regimes to address climate change as a market failure.¹²²

¹²¹ Bahar, Heymi, Egeland, Jagoda and Steenblik, Ronald (2012), “Domestic Incentive Measures for renewable Energy with Possible Trade Implications”, OECD Trade and Investment Papers, COM/TAD/ENV/JWPTE(2011)46/FINAL, [http://search.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=COM/TAD/ENV/JWPTE\(2011\)46/FINAL&docLanguage=En](http://search.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=COM/TAD/ENV/JWPTE(2011)46/FINAL&docLanguage=En)

¹²² See footnote 27.

Table 3: WIR 2010 Example of references to low-carbon investment and their relation to TRIMS/TRIPS

WIR 2010 text	CSEND Proposition
Drivers (push factors) such as home-country policies, public opinion and shareholders' muscle are increasingly weighing on TNCs' decisions to invest in low-carbon activities abroad. P.xxix	
Developing countries are confronted with two major challenges in responding to climate change and moving towards a low carbon economy: first, mobilization of the necessary finance and investment; and second, generation and dissemination of the relevant technology. P.xxix	Green TRIPS needed
Creating an enabling policy framework. This includes the provision of adequate investment promotion, protection and legal security. Other supporting policies include the provision of incentives and regional integration agreements to overcome constraints of market size for low-carbon foreign investment. The emergence of new areas of low-carbon foreign investment – e.g. the production of renewable energy and associated products and technologies, fuel-efficient or alternative-fuel modes of transport and new building materials – is likely to require specific policies to complement the “traditional” elements of the policy framework. Foreign investment into new low-carbon industries may not be competitive in the start-up phase and may therefore need government support, such as feed-in tariffs for renewable energy or public procurement. In addition, such market-creation mechanisms are likely to require revisions to the regulatory framework, including the establishment of emission standards or reporting requirements. There is a need for capacity development in developing countries to enable them to deal with these complex tasks. P.xxx	Green TRIMS needed
In specific segments of industries and value chains, where the absorptive capacities of domestic companies are high but low-carbon technology and know-how are lacking, governments can target specific foreign investors in order to acquire the necessary know-how. P.xxxi	Green TRIPS needed
Creating a conducive framework for crossborder flows of technology. The key elements of a favourable environment for cross-border flows of low-carbon technology include availability of the requisite skills, appropriate infrastructure (e.g. some countries are setting up low-carbon special economic zones), measures to define and create markets in low-carbon products, targeted incentives (e.g. to invest in the necessary R&D or technology adaptation) and a strengthened legal system. How these issues play out varies between economies; for instance, some developing countries have the resources to bolster education and training in the necessary skills. Another issue for cross-border technology flows into host countries is intellectual property (IP) rights protection. Foreign investors in some sectors consider strong protection and enforcement a precondition for technology dissemination, but the actual effects differ from country to country. Concerns have been expressed by developing countries that an IP regime should not only support IP protection and enforcement, but also guarantee greater access to appropriate technologies. p.xxxi	Green TRIMS / TRIPS needed
Effective industrial and competition policies are key to tackling the negative effects of low-carbon foreign investment, such as crowding out and attendant dependency on foreign low-carbon technology suppliers. Industrial policies can help affected domestic companies to improve and upgrade; an effective competition policy framework can control the emergence of monopolies and prevent the abuse of dominant market positions. p.xxxii	Green TRIPS needed
Attention needs to be given to the dual edged nature of IIAs. On the one hand, by committing internationally to a stable and predictable investment policy environment and providing investment protection, IIAs can contribute to increasing a country's attractiveness for low-carbon foreign investment. On the other hand, IIAs can possibly constrain the host country's regulatory powers with respect to measures aiming to facilitate a transition to a low-carbon economy. p.xxxii	Green TRIMS needed
Policymakers may also wish to consider complementary, broader approaches. A multilateral declaration, clarifying that IIA parties are not prevented from adopting climate change-related measures enacted in good faith, could help enhance coherence between the IIA and the climate change regimes. p.xxxii The potential relocation of carbon-intensive production from highly regulated places to countries with less stringent or no regulation on emissions has raised concerns. There are fears that this “carbon leakage” – due to free riding – impedes global emission reduction efforts, and that such relocations of production may result in a loss of investment-related benefits (e.g. tax revenues and employment) in the home country. A debate has begun on whether to introduce border adjustment measures (e.g. tariffs) to deal with the issue of carbon leakage. There are technical difficulties when it comes to assessing the carbon intensity of individual imported goods, and there are doubts as to whether different types of border adjustment policies would be consistent with World Trade Organization (WTO) rules. In addition, caution is warranted for countries to guard against possible protectionism affecting efficiency-seeking and export-oriented outward investment under the pretext of such carbon-related policy measures. pp.xxxii/xxxiii	Green TRIMS needed

WIR 2010 text	CSEND Proposition
<p>Some home countries also encourage their firms to export (low-carbon) technologies and products or to expand overseas through export credits, export sales guarantees and investment guarantees, thereby building on capabilities developed at home and benefiting from economies of scale. In addition, some developed countries have developed technical cooperation programmes with developing countries in order to promote low-carbon development and create additional export and investment opportunities for their firms in areas such as rural electrification through renewable energy. In developing home countries (and some developed ones) low-carbon development strategies, policies and regulations might also support their TNCs' outward foreign investment to obtain assets in lowcarbon know-how (section C.2; section D for a more detailed treatment).p.116</p> <p>Costs of production also relate to carbon leakage (section D.6), as TNCs try to optimize their exposure to carbon taxes. P.116</p>	<p>Green Tri-sectoral needed</p>

Source: UNCTAD (2010), World Investment Report, http://unctad.org/en/Docs/wir2010_en.pdf

A **Green Trims+** constitutes an option to renegotiate and re-activate the Trade Related Investment Measures agreement (TRIMS) which came into force in 1995 as part of the Uruguay Round negotiations. TRIMS did not define prohibited FDIs but included a list of local content requirements, trade balancing requirements and export restrictions which were made illegal through the old TRIMS Agreement. WTO member countries were given 90 days to notify WTO of any existing non-conforming measures. There were a total 43 notification by 24 developing countries. After some request for extension of the transition period, all developing countries abolished their notified TRIMS and by 2007, the TRIMS agreement became extinct. A Green Trims+ could become a policy instrument for all WTO members, be they developing or developed.

However, since TRIMS was experienced as a useful mechanism allowing developing countries to temporarily protect their own industries in select

sectors until they were ready to drop these measures, it could be envisaged that a second generation TRIMS agreement could be negotiated which would allow developing countries time to protect infant industry in the sector of carbon reduction technology and hence could make it easier for them to commit to carbon reduction targets. Assessing such a re-use and negotiations of TRIMS+ could be guided by UNCTAD whose research on FDI and developing country mandate would make it the appropriate International Organization to lead such an effort.

In conclusion, a green approach to TRIMS could provide a framework to support the implementation at the national level of measures fostering low carbon investment (focusing on the measures listed in the Annex of the Agreement, i.e. local content requirements). There has been case law citing the TRIMS Agreement and further analysis of this jurisprudence is needed to support the development of an effective green investment regime to stop climate warming.

Chapter 6

Green TRIP++

Main message:

There has been case law citing TRIPS provisions which are relevant for the implementation of measures supporting low carbon investment and low carbon production. There is a need to further analyze these cases in order to identify the legal arguments around compulsory licensing, technology transfer, etc.)

The WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), negotiated in the Uruguay Round, introduced intellectual property rules into the multilateral trading system for the first time. The areas covered by the TRIPS Agreement are:¹²³

- Copyright and related rights
- Trademarks, including service marks
- Geographical indications
- Industrial designs
- Patents
- Layout-designs (topographies) of integrated circuits
- Undisclosed information, including trade secrets

The extent of protection and enforcement of these rights varied widely around the world; and as intellectual property became more important in trade, these differences became a source of tension in international economic relations. The trade rules for intellectual property rights are intended to establish minimum levels of protection that each government should give to the intellectual property of fellow WTO members. Governments are allowed to reduce any short term costs through various exceptions, for example to respond to public health crises. In case of trade disputes over intellectual property rights, the WTO's dispute settlement system can be called upon to enforce TRIPS rules.

Least developed countries (LDCs) were allowed an initial 10-year transition period (1995-2005) when the TRIPS Agreement was agreed in 1995. This transition period exempts them from applying the minimum standards established by the TRIPS Agreement. WTO members granted a second extension in 2005 for a period of seven and a half years, until 1st July 2013. In November 2012, the LDCs tabled another extension of the transition period proposing the exemption from TRIPS obligations until they cease to be an LDC. This proposal was discussed at the TRIPS Council meeting on 5 March 2013.¹²⁴

For both developing and developed countries, technology and technology transfer are key elements to deal with climate change and national competitiveness. There is a need to increase trade in cleaner technologies in order to spread them worldwide. Trade is very important for technology transfer and the role of the WTO is critical in regard to the access of technology (respect of IP). Technology transfer across borders requires application of IP rules while, at the same time, facing market failure and environmental threats of climate warming, requires flexible interpretation of TRIPS.

In sum, trade in technology is important for four reasons: 1-a lot of progress in technology is needed to combat climate change at global level, having an open system helps diffusion of

¹²³

http://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm7_e.htm

¹²⁴ Priyadarshi, S. and Rahman, T. (2013) "Build up to Ninth WTO Ministerial Conference: Issues of Interest to LDCs", Commonwealth Trade Hot Topics, Issue 98, <http://www.thecommonwealth.org/files/243366/FileName/TradeHotTopics92FINAL.pdf>, p.3.

technology; 2-separate abatement costs and who pays the costs; 3-threat of trade sanctions under Montreal Protocol; and 4-trade measures to correct or carbon leakage. Technology transfer involves the processes of sharing knowledge and

adapting technology to meeting local conditions to support climate change adaptation and mitigation efforts. The tables below identify the most relevant technologies for climate change adaptation and mitigation.

Table 4: Technologies for Adaptation

MAJOR AREAS	TECHNOLOGIES AND PROCESSES
Extreme weather, climate and sea-level events	Climate models and systems for monitoring and early warning Climate-proofing infrastructure
Coastal zone management	To protect: tidal barriers, dune and wetland restoration, and afforestation To retreat: establishing set-back zones and creating upland buffers To accommodate: improved drainage technologies and early warning and evacuation systems
Water resource management	Desalination techniques Reservoirs and levees for flood management Advanced recycling and efficient technologies in industrial cooling.
Agriculture	New varieties of crops Advanced irrigation systems Efficient wind breaks Advanced erosion control techniques
Public health	Advanced urban planning to reduce heat island effects Improved public transport Disease vector control, and vaccination

Source: UNDESA (2008), "Climate Change: Technology Development and Technology Transfer", Background paper, http://sustainabledevelopment.un.org/content/documents/1465back_paper.pdf, p. 13

Table 5: Technologies for Mitigation

	Near-term	Mid-term	Long-term
ENERGY SUPPLY			
Fossil fuels	IGCC ¹ commercialization Solid oxide fuel cells Cleaner coal plants	Hydrogen (H ₂) co-production from coal/biomass	
Hydrogen	Integrated stationary fuel cell systems Demonstration H ₂ production from renewable sources	Low cost H ₂ storage and delivery. H ₂ from renewable sources. Renewable H ₂ -powered fuel cell vehicles	H ₂ and electric economy
Renewable energy	Lower cost wind power Demonstration cellulosic ethanol Photovoltaic (PV) clad buildings. Cost-competitive solar PV First-generation bio-refinery	Low-wind speed turbines Advanced bio-refineries Cellulosic biofuels Community-scale solar systems Water photolysis Energy storage options	Widespread renewable energy utilisation Genetically engineered biomass Biologically inspired energy and fuels
Nuclear fission & fusion	Advanced reactor and fuel cycle technology	Generation IV nuclear plants. Fusion plant demonstration	Advanced concepts for waste reduction. Fusion power plants
END USE AND INFRASTRUCTURE			
Transportation	Hybrid and plug-in hybrid electric vehicles Alternative and flex-fuel vehicles Improved energy storage Power electronics	Fuel cell vehicles and H ₂ fuels Efficient and clean heavy trucks Cellulosic ethanol vehicles Intelligent transport systems Low-emissions aircrafts	Zero-emission vehicle systems Optimized multi-modal intercity and freight transport Engineered urban designs and regional planning
Buildings	High-performance integrated homes High-efficiency appliances Insulation control windows	"Smart" buildings. Solid-state lighting. Ultra efficient HVACR ² Neural-net building controls	Energy managed communities Low-powered sensors with wireless communications
Industry	High-efficiency boilers Greater waste heat utilisation Bio-based feedstocks	Superconducting electric motors. Efficient thermoelectric systems	High-efficiency all-electric manufacturing. Widespread use of bio-feedstocks
Electric grid and infrastructure	Distributed generation. Smart metering and controls for peak shaving. Long-distance direct current (DC) transmission	Neural-net grid systems Energy storage for load levelling	Superconducting transmission and equipment Wireless transmission
CO₂ CAPTURE, STORAGE AND SEQUESTRATION			
CO₂ capture	Post-combustion capture Oxy-fuel combustion Oxygen separation techniques	Novel capture technologies Biomass coupled with CO ₂ capture and storage (CCS)	Novel in-situ CO ₂ conversion technologies
Geological sequestration	Reservoir characterization Enhanced hydrocarbon recovery. CO ₂ injection for coal-bed methane production	Mineralization of solid carbonates Well sealing techniques demonstrated	Sufficient effective CO ₂ storage capacity
Terrestrial sequestration	Reforestation Soil conservation	Sequestration decision support tools. Bio-based and recycled products	Biological sequestration Carbon and CO ₂ based products and materials
Marine sequestration	Effective dilution of directly injected CO ₂	Carbonate dissolution/alkaline addition	Safe long-term marine storage
EMISSION REDUCTION OF OTHER GHGs			
Methane from energy production and waste	Bioreactor land-fill technology New drilling techniques for recovery of coal-bed methane	Advanced land-fill gas utilization. Ventilation-air methane technologies	Integrated waste management systems
Methane and N₂O from agriculture	Anaerobic digesters for heat and electricity production	Utilisation of soil microbial processes	Zero-emission agriculture
High global warming potential gases	Advanced refrigeration technologies. Advanced aluminium smelting processes	Alternative refrigeration fluids	Solid-state refrigeration and air conditioning systems
N₂O from combustion	Catalytic reduction of N ₂ O in nitric oxide plants	Catalysts that reduce N ₂ O to elemental nitrogen in diesel engines	Advanced vehicles and non-carbon based fuels

Source: UNDESA (2008), "Climate Change: Technology Development and Technology Transfer", Background paper, http://sustainabledevelopment.un.org/content/documents/1465back_paper.pdf, p. 12

Recent analyses suggest that environment impact on competitiveness is an empirical regulations can impact competitiveness: but it still remains uncertain if at all and to what extent. The

question. Also the investment decisions issue is very important to combat climate change.¹²⁵

As mentioned in a UNDESA, UNEP and UNCTAD report (2012; 11-13),

“the support given by industrial countries to green industries, including for R&D, though essential for the transition to the green economy, also raise some concerns... Furthermore, while there are rules in this area, there is a divergence of opinion among the three authors about what WTO rules say, which reflects a broader policy debate. Although we could wait for clarity from the WTO dispute settlement process, this would not give policy makers certainty about what they can and cannot do.”¹²⁶

The above mentioned report also warns about the risks of misuse of the green economy concept:

“Concerns have been raised by developing countries' delegations that the “green economy” concept may be misused or taken out of context, and that the promotion of the “green economy” concept may give rise of unhelpful or negative developments, and these must be avoided... In 1994, some international environment NGOs proposed to amend GATT rules to enable WTO Members to use trade-related environmental measures (TREMs) to enable import restrictions based on PPMs, and advocated TREMs to promote internalizing the environmental costs of traded goods and setting a “fair price” for

a traded product. (Raghavan, 1994a). In contrast, the Third World Network argued that the proposals to legitimize TREMs would add another burden of adjustment to the already-burdened South, and could change the non-discrimination principles of the multilateral trading system and change the basic rules of the game and the conditions of competition under the guise of protecting the environment. (TWN, 1994). The paper described several examples of how these concepts would be difficult or impossible to be implemented and how they would unfairly be biased against the developing countries. It suggested that the initiatives to introduce TREMs and legitimize PPMs in the WTO be abandoned. It proposed instead that any trade measures linked to the environment should be addressed by negotiations for an international treaty and any treaty containing obligations on developing countries must have provisions for technology transfer and financial resources as an integrated contractual obligation (TWN, 1994).” (UNDESA, UNEP and UNCTAD 2012; 72-73)

Private sector participation is crucial for developing new technologies to foster the transition to a greener economy while increasing competitiveness. At the same time, a good number of governments support their private sector through: subsidies to non-carbon energy sources; tariff and non-tariff barriers; removing investment barriers; supporting technical and absorptive capacity; creating incentives for clean technologies; strengthening IPRs; and financing clean energies. One important aspect in promoting green investment is funding. Financing is crucial in order to achieve technology transfer. Also the notion of “product and processing methods” (PPMs) is very relevant to deal with carbon footprint. The challenge for the PPMs is how to approach PPMs without violating the principle of non-discrimination.

In addition, technology development is often a mix of public and private research. For instance,

¹²⁵ Notes, TAIT Second Conference "Climate change, trade and competitiveness: Issues for the WTO", 16 to 18 June, 2010.

¹²⁶ UN-DESA, UNEP, UNCTAD (2012), “The Transition to a Green Economy: Benefits, Challenges and Risks from a Sustainable Development Perspective”, Report by a Panel of Experts to Second Preparatory Committee Meeting for United Nations Conference on Sustainable Development, http://www.unep.org/greeneconomy/Portals/88/documents/research_products/UN-DESA,%20UNCTAD%20Transition%20GE.pdf

government of industrialized countries subsidizes basic research, even applied research at university laboratories which later on get licensed to private sector enterprises through Public Private Partnership research agreements. Often times the considerable investment in preliminary basic research leading to applied technology products is not factored into IPs and hence makes claims for IP by secondary users such as TNCs.

The Clean Development Mechanism (CDM) is a tool designed to support the implementation of climate protection projects. The CDM has contributed to promote technology transfer by financing emission reduction projects using technologies currently not available in the developing (host) countries. The box below highlights the impact of the CDM on technology transfer and investment.

Box 12: Impact of the Clean Development Mechanism on Technology Transfer and Investment

Under the Clean Development Mechanism (CDM), developed countries may acquire fungible credits for greenhouse gas emission reductions that result from the implementation of climate protection projects in developing (host) countries, with a view to assisting (i) developing countries in achieving sustainable development and contributing to the ultimate objective of the Convention and (ii) developed countries in achieving compliance with their emission limitation and reduction commitments under the Protocol. As of early April 2010, over 2100 project activities and programs had been registered as CDM projects, and nearly 400 million tons of certified carbon dioxide equivalent emissions reductions (CERs) have been issued since the first CDM project was registered in November 2004. Analysis of the experience to date suggests that the CDM has stimulated additional low-carbon investment and technology transfer:

Technology transfer: Although the CDM does not have an explicit technology transfer mandate, it may contribute to technology transfer by financing emission reduction projects using technologies currently not available in the host countries. A study commissioned by the UN Climate Convention secretariat (Seres & Haites, 2008), which analyzed the claims of technology transfer made by project participants in the project design documents, found that:

- Roughly 36% of the projects accounting for 59% of the annual emission reductions claim to involve technology transfer.
- Technology transfer is more common for larger projects and projects with foreign participants. The technology originates mostly from Japan, Germany, the USA, France, and Great Britain. For most project types, project developers appear to have a choice among a number of domestic and/or foreign technology suppliers.
- Technology transfer is very heterogeneous across project types and usually involves both knowledge and equipment.
- The rate of technology transfer is significantly higher than average for some host countries (including Bolivia, Ecuador, Guatemala, Honduras, Indonesia, Kenya, Malaysia, Mexico, Pakistan, South Africa, Sri Lanka, Thailand and Vietnam) and significantly lower than average for Brazil, China, and India.
- As the number of projects increases, technology transfer occurs beyond the individual projects. This is observed for several project types in China and Brazil.

Investment: The most common form of CDM transaction initially was forward contracts to purchase CERs from emission reduction projects, which limits the risk to the buyer (Arquit Niederberger & Saner, 2005). Many of these projects were implemented unilaterally and financed without any foreign investment. As the carbon market has matured, CER trades on the secondary market have come to dwarf the primary market, but these spot, futures and options transactions do not directly give rise to emission reductions (Capoor & Ambrosi, 2009). With respect to primary CER generation, two basic modes have been identified (Arquit Niederberger & Saner, 2005):

- CER trade model: For CER forward purchases, transactions are governed by low-cost greenhouse gas emission reduction and sink potentials, in addition to traditional factors of comparative advantages in production and trade. The relationship between international trade flows and potential CDM flows warrants further study.
- CDM investment model: Direct production of CERs through FDI (or other forms of equity investment) in CDM projects. Some data on the total investment into CDM projects is becoming available (e.g., refer to the investment analysis in the CDM Pipeline <http://cdmpipeline.org>), but information on the drivers, financial structure and transaction type of private sector CDM deals is generally confidential, but would help CDM host country policymakers and project developers to respond better to CDM demand (via targeted incentives, awareness-raising, capacity building and project identification) and thereby attract CDM investment or enhance their ability to export CERs in support of low-carbon development (Arquit Niederberger & Saner, 2005).

Source: Arquit, Gage and Saner (2011), "Levers to Enhance TNC Contributions to Low-Carbon Development – Drivers, Determinants and Policy Implications", Background papers/Special studies" at [http://www.uncsd2012.org/content/documents/Levers%20to%20Enhance%20TNC%20Contributions%20to%20Low%20Carbon%20Devlopment.pdf](http://www.uncsd2012.org/content/documents/Levers%20to%20Enhance%20TNC%20Contributions%20to%20Low%20Carbon%20Development.pdf), p. 4

Technology is embedded in many different global economic negotiations. A multilateral compromise on intellectual property rights is difficult to accomplish due to tensions between countries whose competitive advantage derived principally from control over knowledge goods and those whose development trajectories and aspirations demand sustainable access to these goods.¹²⁷

Compulsory licensing option

Brazil has called for a Doha Declaration on Climate Change, applying the same logic to the global public good of climate mitigation as was applied in the area of medicines to human health, namely taking full advantage of the flexibility within TRIPS (WTO Agreement on Trade-related Aspects of Intellectual Property Rights) to grant **compulsory licenses** to critical climate-friendly technologies, and the Group of 77 and China has also called for **compulsory licensing** under the UNFCCC negotiations. On the other end of the spectrum, universities and public-private partnerships are beginning to voluntarily adopt alternative licensing solutions, such as including humanitarian or open licensing clauses within their licensing agreements. And the list of ideas goes on. The US-CHINA Clean Energy Forum has advanced the idea of establishing a joint intellectual property protection program, with insurance jointly written by US and Chinese entities (for example by the US Overseas Private Investment Corporation and by People's Insurance Company of China), to lend credibility to IPR protection regimes.

One alternative to solving this tension could be a **Green TRIPS++** approach which could revisit the TRIPS agreement and to explore ways how to apply similar exceptions as are available for LDCs in the field of health. Faced with the full brunt climate change like floods, drought and deforestation exceptions could be considered to allow LDCs to get access to technology from

developed countries in regard to carbon reducing machines through the clause of "compulsory licensing". Such use of the "compulsory licensing" option could be a leverage for LDCs in their UNFCCC's adaptation negotiations and hence TRIPS could be broadened to include TRIPS++ to safeguard against climate change.

In conclusion, a green approach to TRIPS can provide a framework to support technology transfer into developing and least developed countries in order to promote the development of low carbon production to fight climate warming. There has been case law citing the TRIPS Agreement and further analysis of this jurisprudence is needed to support the development of an effective, greener IPR regime to stop climate warming.

¹²⁷ ICTSD (2013), "ICTSD Profile", <http://ictsd.org/downloads/2013/05/pursuing-sustainability-in-the-global-economy.pdf>, p.13

Chapter 7

Green Plurilateral+++ (Tri-Sectoral) Agreement ¹²⁸

Main message:

The Green Plurilateral+++ Agreement proposed below is a comprehensive solution to fight climate warming comprising of negotiations linking three domains within the WTO, namely: Environment (green goods and services); Energy (green goods and services); and Trade and Development (green commitments made in PTAs; trade facilitation; and capacity building). This plurilateral (tri-sectoral) solution is intended to support Low Income Developing Countries (LI-DCs) and Least Developed Countries (LDCs) to grow economically, reduce poverty within green growth parameters and to set and apply carbon and greenhouse gas emissions targets.

¹²⁸ This section is based on Saner (2011), "International governance options to strengthen WTO and UNFCCC", <http://www.diplomacydialogue.org/publications/environmental-diplomacy/101-international-governance-options-to-strengthen-wto-and-unfccc>

The trade and climate change communities faced a double negative at the beginning of 2010 – namely no global deal at the Copenhagen climate conference to reduce emissions of heat trapping gases and still no concluding deal at the WTO of the Doha Round which commenced in November 2001. Both multilateral agreements are highly complex and also characterized by high stakes for all parties involved, whether industrialized or developing country.

Attempts to keep the two multilateral agreements and their respective negotiations apart, in the hope of being able to reduce complexities, have not been successful. A growing number of trade and climate change experts, government officials and concerned citizens alike see these two multilateral processes in interaction with each other directly and indirectly. Linking of concessions across negotiation regimes is mentioned with increasing frequency and countries take public stances against or in favor of such linkages.

Some pundits warn of an impending collision of two trains rushing towards each other risking collision and collapse of both trains (UNFCCC vs. WTO); while others have pointed out that both trains seem to become increasingly fragmented and broken up into de-coupled wagons and cars. The likelihood has increased that the decoupled wagons go off on different tracks and different speeds risking either collision(s) or ending motionless somewhere in the desert of oblivion.

A substantial number of scholars attribute climate change to market failure observing that the externalities (environmental costs of production) are not included in current market prices and hence environmental damage (CO₂ emissions and environmental pollution) ends up being a cost to society rather than being borne by the market actors – buyers and sellers of products and services.

Market failures have also been identified as consisting of structural market failure induced by the lack of competition rules in this field therefore allowing firms to gain monopolistic rents. Such monopolistic positions might also be induced by

the action of governments or the absence of government intervention. In addition to that, non-market failures might also occur if governments and civil society are not able to create an environment conducive to development. One could call these inabilities government failure and societal failure.

An important factor of government failure is the inability of governments to perform and to fulfill their role and responsibilities. Further research on this aspect of non-market failure has been done by various scholars who have brought to the fore the importance of governments to manage effectively and efficiently inter-ministerial trade policy coordination (Saner 2010)¹²⁹ and government to economic and SCOs actor trade policy consultations.

While government failure (inability or unwillingness to implement environmental laws) pertains to shortcomings at national level, market failure points also to the disfunctioning of the world economy at global levels. What needs to be added is an analysis of the governance issues between the trade and climate change multilateral regimes (inter-regime governance failure), how these inter-regime conflicts manifest themselves, how they could be solved and what kind of bearing they have on FDI in general and on the goal of achieving Low Carbon investment in specific.

A **Green Plurilateral+++ Agreement** is a comprehensive solution to fight climate warming and to reduce poverty. This solution considers a negotiation trade off across three domains of the WTO, namely:

1-Environment: green goods and services relevant for fighting climate change (making “green” commitments in GATT and GATS related to environment and climate change)

2-Energy: green goods and services relevant for supporting green energy

¹²⁹ Saner, R (2009); “Trade Policy Governance through Inter-Ministerial Coordination: A source book for trade officials and development experts” Republic of Letters, Dordrecht.

(making “green” commitments in GATT and GATS related to green energy)

3-Trade and Development: making green commitments in PTAs; trade facilitation; capacity building to help LI-DCs and LDCs to grow economically and reduce poverty within green growth parameters.

Adopting this green plurilateral solution, WTO members would be negotiating their GATT and GATS commitments in regard to climate change and green environmental goods and services, green energy goods and services, trade facilitation and capacity building). Such a plurilateral solution would be reached once a critical mass of WTO members has joined the green plurilateral agreement. This green plurilateral would be multilateralized through MFN to all WTO members.

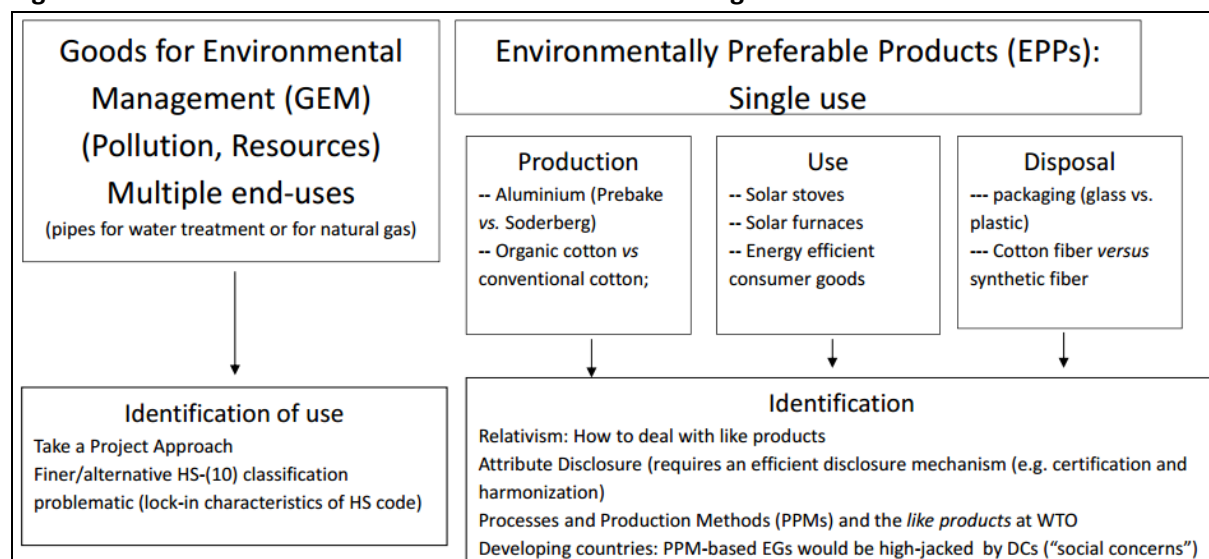
Low income developing countries (LI-DCs) and least developed countries could be given the right to discriminate between high carbon energy products versus low carbon energy products. Another solution could be to provide compulsory licensing for LI-DCs and LDCs to develop green technologies using environmental services and energy services (drilling, equipment, crude oil processing equipment, etc.) to generate more environmental-friendly energy sources.

Environmental Goods and Services

Environmental goods and services are interconnected and have been insufficiently addressed by the WTO members. The Paragraph 31 (iii) of the Doha Ministerial declaration calls for “*the reduction or as appropriate elimination of tariff and non-tariff barriers to environmental goods and services.*” However, no deadlines were set and no multilaterally accepted consensus was reached on what constitutes “environmental goods and services” (EGS).¹³⁰ The figure below highlights the main aspects to be considered for defining an environmental good.

¹³⁰ Sugathan (2004), Presentation on “Environmental Goods and Services negotiations: Challenges and opportunities”, ICTSD/WTO Workshop on Environmental Goods: Para 31 (iii) of the DDA, Geneva, https://www.google.ch/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CDMQFjAA&url=http%3A%2F%2Fwww.wto.org%2Fenglish%2Ftratop_e%2Fenvir_e%2Fwksp_goods_oct04_e%2Fsugathan_ictsd_e.ppt&ei=Vf2IUZitDYXfOIKqfql&usq=AFQjCNGjxoFM0hIbMWEZfOB8wmIFc7SyzA&bvm=bv.47008514.d.ZWU

Figure 3: Identification and Classification of environmental goods



Source: De Melo (2012), Presentation on “Implications of negotiation failures on environmental goods and services at the Doha Round for global trade governance”, WTO Public Forum, http://www.wto.org/english/forums_e/public_forum12_e/session41demeloferdi_e.pdf

Within the WTO framework, the negotiations on environmental goods take place in the Negotiating group on non-agricultural market access (NAMA) while the definitional aspects are examined by the Committee on Trade and Environment-Special session. So far there is no clear agreement among WTO Members on definitions and coverage of environmental goods.¹³¹ The WTO identified a list of environmental products.¹³² APEC has also developed its own list.¹³³ The World Bank also selected 43 “Climate-friendly” Goods (technologies fall into four sub-categories:

wind; solar; clean coal; and efficient lighting).¹³⁴ OECD and APEC lists used as starting point for discussions on Environmental goods in the WTO (see these lists in Annex 5). Many WTO members proposed a “list-based” approach instead of seeking a prior definitional clarity on environmental goods. OECD/APEC lists mostly contain products of which developing countries are net importers. Some of the few products in the OECD/APEC which developing countries are net exporters are: Methanol, ethanol, mats and screens, fluorescent lamps, plastics.¹³⁵ Argentina, Australia, Canada, China, Brazil, the European Union, India, Japan, Korea, Qatar, Switzerland, Taiwan and United States are the WTO members who have submitted proposals to the Committee on Trade and Environment. Below are described some of the main proposals made by WTO members.¹³⁶

¹³¹ It is worth noting that the OECD has defined “environment industry” as “activities which produce goods and services to measure, prevent, limit, or minimise or correct environmental damage to water, air and soil, as well as problems related to waste, noise and ecosystems.” See OECD (1996), “The global environmental goods and services industry”, <http://www.oecd.org/industry/ind/2090577.pdf>

¹³² For an illustrative list of projects in 2003 and 2004 in the categories of products in the 153 environmental goods list, see Jha, V. (2008) “Environmental Priorities and Trade Policy for Environmental Goods: A Reality Check”, ICTSD Issue paper No.7, <http://ictsd.org/downloads/2012/03/environmental-priorities-and-trade-policy-for-environmental-goods.pdf>, p.35 for an illustrative list of projects in 2003 and 2004 in the categories of products in the 153 environmental goods list

¹³³ http://www.apec.org/Meeting-Papers/Leaders-Declarations/2012/2012_aelm/2012_aelm_annexC.aspx

¹³⁴ The list is available from http://www.apec.org/Meeting-Papers/Leaders-Declarations/2012/2012_aelm/2012_aelm_annexC.aspx In November 2007, United States and European Union made a proposal based on this list.

¹³⁵ Sugathan (2004), op. Cit.

¹³⁶ The list of WTO members proposals at the Committee of Trade and Environment is available from [https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S006.aspx?Query=\(%40Symbol%3d+tn%2fte%2fw*\)&Language=ENGL](https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S006.aspx?Query=(%40Symbol%3d+tn%2fte%2fw*)&Language=ENGL)

United States’ proposal¹³⁷ consists of a “core-list” (on which consensus exists) and a “complementary list” for which individual countries could nominate products. Faster liberalization is envisaged for core-list products and liberalization of a minimum of x% on goods in a complementary list (which Members could choose). This plurilateral proposal would encourage WTO members to coordinate - at the domestic level among relevant government agencies when negotiating, implementing, and applying WTO rules and Specific Trade Obligations set in MEAs. It would also request the WTO Secretariat to cooperate and collaborate with the MEA secretariats. This proposal is the only one which offers concrete modalities so far for environmental goods negotiations.

China¹³⁸ called for a “common-list” including goods of export interesting to both developed and developing countries and a “development list” which would include those goods from the common list eligible for lesser reduction commitments. China and India¹³⁹ called for addressing the development dimension for a “triple-win” outcome through: (a) Mechanisms to ensure the development and transfer of environmentally sound technology (EST); (b) A financial mechanism to ensure access to and development of EST, investments in environmental projects and capacity development for production of environmental goods; and (c) Special and Differential Treatment for developing and least-developed member countries.

On specific products only **Japan**¹⁴⁰, **Qatar**¹⁴¹ and **Taiwan** have submitted proposals. Japan’s list includes products from both APEC and OECD lists plus some additional products. Qatar proposed efficient, lower carbon pollution emitting fuels and technologies. And Taiwan submission focused on pollution control equipment.

It is important to highlight that some elements of this plurilateral solution would have direct links to the green approach to TRIMS and TRIPS proposed earlier in this policy paper. In particular, the submission by **Argentina** on “The Doha Round and Climate Change”¹⁴² to the Committee on Trade and Environment in Special Session has many references directly linked to green TRIMS and green TRIPS. Box below highlights some of these references and identifies its link to TRIMS and/or TRIPS agreements.

On the other hand, the deployment of technologies for mitigation of greenhouse-gases (GHGs) depends on a wide range of services (including those that are imported) such as business services, telecommunications services, and construction and related engineering services. Examples of products and technologies connected with the provision of climate change include energy-efficiency programmes which often utilize new electronic controls, energy-efficient boilers and HVAC equipment. As identified by Steenblik and Geloso Grosso (2011), projects in most developing countries require that a great deal of technologically sophisticated equipment must be imported while many construction materials are procured locally. This is the case of turbines for power projects, centrifugal blowers for methane capture projects, electricity sub-meters for energy-efficiency projects and electronic control equipment for many types of projects.¹⁴³

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¹³⁷ WTO document TN/TE/W/3

¹³⁸ WTO document TN/TE/W/42

¹³⁹ WTO document TN/TE/W/79

¹⁴⁰ WTO document TN/MA/W/15

¹⁴¹ WTO document TN/TE/W/19

¹⁴² WTO document TN/TE/W/74

¹⁴³ Steenblik, R. and M. Geloso Grosso (2011), “Trade in Services Related to Climate Change: An Exploratory Analysis”, OECD Trade and Environment Working Papers, 2011/03, <http://dx.doi.org/10.1787/5k9c5wtd9rzw-en>, p.39.

Table 6: Submission by Argentina to the Committee on Trade and Environment – Special Session. Example of references to green TRIMS/TRIPS

Submission by Argentina “The Doha Round and Climate Change”	CSEND Proposition
Climate change is one of the most pressing challenges faced by man. The WTO negotiations to eliminate barriers to trade in environmental goods and services should therefore be aimed primarily at facilitating access to goods and services that are used in climate change mitigation and adaptation projects. This would help to reduce the costs of projects relating to action against climate change, which might help to stabilize greenhouse gas concentrations at a level that would prevent anthropogenic interference with the climate system. P.1	Green TRIPS needed
The adoption of an integrated approach would be an opportunity for the results of the Doha Round to complement and support the objectives of the UN Framework Convention on Climate Change, thereby encouraging the implementation of projects that use climate and energy friendly goods and technologies. P.2	Green Tri-sectoral needed
The link between trade liberalization and CDM projects is outlined in the World Bank report entitled "International Trade and Climate Change: Economic, Legal, and Institutional Perspectives", which states that "it may be desirable from a climate change mitigation perspective for WTO negotiators to grant priority for products, technologies, and services imported for projects under the Clean Development Mechanism (CDM)". Pp.2-3	Green TRIPS needed
it would help to reduce the costs of setting up CDM projects and promote the transfer of technologies (e.g. those linked to renewable energy) to developing countries, thus facilitating the development of such countries' domestic capacity in the sector; P.3	Green TRIPS / TRIPS needed
It is also considered necessary to develop effective technology transfer mechanisms within the WTO and to ensure special and differential treatment for developing countries in the implementation of the integrated approach. These issues merit special attention and will therefore be addressed in a follow-up communication. P.3	Green TRIPS needed

Source: WTO document TN/TE/W/74

Trade in environmental services is closely linked with trade in environmental goods, since the provision of those services often relies on the use of related environmental goods. Within the WTO/GATS framework, environmental services includes sewage services, refuse disposal, sanitation and similar services, reducing vehicle emissions, noise abatement services, nature and landscape protection services and “other” environmental services.¹⁴⁴

So far, more than 40 WTO members (developed and developing countries) have undertaken specific commitments on environmental services. Most members have commitments in several sub-sectors while some have commitments in all sub-sectors. No exemptions to most-favored nation (MFN) treatment (i.e. non-discrimination) have been taken in environmental services. Annex 4

¹⁴⁴

http://www.wto.org/english/tratop_e/serv_e/environment_e/environment_e.htm

identifies the GATS commitments in environmental services. WTO members have identified individually or in groups the following objectives in the market access negotiations on environmental services:¹⁴⁵

- Giving high levels of market access across sub-sectors, as far as possible.
- Providing Mode 1 commitments for as many sub-sectors as possible, in particular advisory services.
- Objective of full commitments for Mode 2 (consumers or firms making use of a service in another country).
- Having ambitious commitments for Mode 3, removing barriers on commercial establishment; if exclusive rights are awarded, foreign suppliers should be able to participate in the tender and operation of the service.

¹⁴⁵ WTO document TN/S/23

- Making Mode 4 commitments to ensure mobility of service suppliers, such as remediation specialists, conservationists and geomatic professionals.
- Extending commitments across all sub-sectors listed in CPC Prov., i.e. 9401 to

9409, taking into account the interplay with related services, such as construction, engineering, technical testing, and analysis and management consulting services.

Box 13: Examples of trade by mode of delivery in services related to climate change

Mode 1 – Cross-border trade

Carbon emissions modeling and logistics route optimization provided from a consulting office in the host country to clients overseas via the Internet. Remote, cross-border monitoring services to manage wind farm and gas-fired power plant operations.

Mode 2 – Consumption abroad

Engineers travelling overseas to receive training in energy performance contracting; eco-travelling services (e.g. hotels and alternative transport services purchased in a foreign country).

Mode 3 – Commercial presence

Operation of eco-logistics services may be provided by a local subsidiary of an international corporation; a company engaged in biogas recovery from landfill waste operates in a foreign country through a local subsidiary.

Mode 4 – Movement of natural persons

Professionals travel overseas to temporarily provide services associated with carbon capture and storage. Repair service teams are deployed to wind farms that require repair.

Source: Steenblik, R. and M. Geloso Grosso (2011), "Trade in Services Related to Climate Change: An Exploratory Analysis", OECD Trade and Environment Working Papers, 2011/03, <http://dx.doi.org/10.1787/5kqc5wtd9rzw-en>, p.9

Finally, WTO members, including Cuba, Australia, Switzerland, Canada, the European Union and the United States, have made proposals for further negotiation of environmental services in Special Sessions of the Council of Trade in Services.¹⁴⁶ Likewise, negotiating proposals on energy services have been made by Venezuela, Cuba, Japan, and the European Union.¹⁴⁷

All in all, in the on-going negotiations however, the focus on the development dimension has been highly limited. The thrust of the discussions has been primarily on trade in goods, or what is referred to as the "List" approach. The List

Approach focuses solely on trade in goods and the lists of goods proposed have predominantly been goods with multiple non-environmental uses.¹⁴⁸ In regards to services related to climate change, mode 1 has been identified as a supply option also which parallels the innovation that is taking place in identifying specific tasks that can be separated from ones previously assumed to be inseparable. However, many countries have in the past indicated "not applicable" in their specific services commitments; an update of commitments in mode 1 would help increase investor confidence.¹⁴⁹

Energy goods and services

Energy is the third component of the proposed tri-sectoral green plurilateral solution to fight climate warming. The production, distribution and use of conventional energy types such as fossil fuels, has a direct negative impact on climate change. Likewise, the production of renewable energy is a critical component to fight climate warming by

¹⁴⁶ The WTO official documents of these proposals on environmental services are available from [https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S006.aspx?Query=\(+%40Symbol%3d+s%2fcss%2fw%2f*+or+tn%2fs%2fw%2f*\)+and+\(+%40Title%3d+environmental+\)&Language=ENGLISH&Context=FomerScriptedSearch&languageUIChange d=true](https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S006.aspx?Query=(+%40Symbol%3d+s%2fcss%2fw%2f*+or+tn%2fs%2fw%2f*)+and+(+%40Title%3d+environmental+)&Language=ENGLISH&Context=FomerScriptedSearch&languageUIChange d=true)

¹⁴⁷ The WTO official documents of these proposals on energy services are available from [https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S006.aspx?Query=\(+%40Symbol%3d+s%2fcss%2fw%2f*+or+tn%2fs%2fw%2f*\)+and+\(+%40Title%3d+energy\)&Language=ENGLISH&Context=FomerScriptedSearch&languageUIChanged=true](https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S006.aspx?Query=(+%40Symbol%3d+s%2fcss%2fw%2f*+or+tn%2fs%2fw%2f*)+and+(+%40Title%3d+energy)&Language=ENGLISH&Context=FomerScriptedSearch&languageUIChanged=true)

¹⁴⁸ WTO document TN/TE/W/79, p.1

¹⁴⁹ Steenblik, R. and M. Geloso Grosso (2011), op. Cit.

reducing greenhouse gas emissions. According to the WTO Director-General, Pascal Lamy,

*“[w]e must reconcile the fact that the world will need more energy with the incontrovertible knowledge that current patterns of energy use are harming the planet. Greater energy efficiency and clean energy will play a central role in moving the world onto a more secure and sustainable energy path.”*¹⁵⁰

The energy sector is a global issue, only a few global disciplines were established. While the relationship between trade and environment and sustainable development is strongly bound to energy, the multilateral rules on energy are highly fragmented and largely incoherent. Examples of energy-specific agreements and institutions addressing energy issues are: the OECD; the International Energy Agency (IEA); the Energy Charter Treaty; the Organization of the Petroleum Exporting Countries; and the European Union and North American Free Trade Agreement (NAFTA), at the regional level. Energy is also addressed by a number of MEAs, including the UNFCCC and its Kyoto Protocol. Climate change mitigation measures catalyze energy efficiency and motivate energy sustainability policies. Recognizing this situation, the climate regime avoided the approach adopted by a number of earlier MEAs which require parties to those agreements to use trade restrictive rules against non-parties to the agreements.¹⁵¹

Energy is central for fighting climate warming and for fostering sustainable development. Governments realize this and put in place incentives to stimulate the production of energy from clean sources. The WTO framework contains rules essential for the regulation of energy trade relations, such as rules on import/export restrictions, transit, subsidies, and

technical regulations.¹⁵² Within the context of WTO, distinction is made between energy as goods (GATT) and energy services (GATS). Energy goods include petroleum, natural gas, coal, nuclear energy, renewable energy, and primary and secondary electricity sectors under GATT. While energy services include: transportation and distribution of energy goods under GATS.

It is important to note that a “gentleman’s agreement” existed among the major trading countries not to discuss petroleum issues in the GATT. This was due to the strategic nature of petroleum trade and the importance of security concerns in respect of petroleum products. Also security considerations greatly influenced trade policy in the energy sector; for example, the United States decided to leave its tariff on crude petroleum unbound in its tariff schedule.¹⁵³

Natural resources such as water, agricultural products, timber, ores, coal, oil, and natural gas are the basis for producing energy. However, no WTO rules apply to the members’ decision on whether or not to produce these natural resources. Most WTO members consider that the exploitation of natural resources is reserved permanently and exclusively to the nations’ internal sovereignty and remains outside the scope of the WTO Agreements. Primary and downstream energy products of WTO members, show low applied tariffs, but bound rates remain high, or even completely unbound, in some important sectors.¹⁵⁴

¹⁵² The Energy Charter Treaty (ECT) is the only inter-regional multilateral treaty covering energy and based on the WTO rules. The ECT applies those rules specifically to energy trade and also among Energy Charter Treaty states which are outside the WTO (important energy producers such as Kazakhstan, Azerbaijan, Algeria, Libya, Iran, Iraq and Sudan, are in the process of acceding the WTO). See http://www.wto.org/english/tratop_e/envir_e/wksp_envir_apr13_e/wksp_envir_apr13_e.htm

¹⁵³ UNCTAD (2003), “Energy and Environmental Services: Negotiating Objectives and Development Priorities”, New York and Geneva, http://unctad.org/en/Docs/ditctncd20033_en.pdf, p.4

¹⁵⁴ Crosby, D. (2010), “Background to WTO Rules and Production/Trade Restrictions in the Field of Energy” in J. Pauwelyn (Ed.), *Global Challenges at the Intersection of Trade, Energy and the Environment*, Chapter 5, Centre for

¹⁵⁰ Speech to the Workshop on the Role of Intergovernmental Agreements in Energy Policy held in Geneva on 29 April 2013 at the WTO,

http://www.wto.org/english/news_e/sppl_e/sppl279_e.htm

¹⁵¹ Cottier T., et. al. (2010), “Energy in WTO law and policy”, http://www.wto.org/english/res_e/publications_e/wtr10_forum_e/wtr10_7may10_e.pdf

Box 14: GATT Article XX exceptions most relevant to energy trade

- Measures “necessary to protect human, animal or plant life or health” (Article XX(b))
- Measures “relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption” (Article XX(g))
- Measures “necessary to secure compliance with laws or regulations which are not inconsistent with [GATT]”. Examples of such measures are “those relating to customs enforcement, the enforcement of monopolies [operated consistently with GATT provisions, see above], the protection of patents, trademarks and copyrights, and the prevention of deceptive practices” (Article XX(d))

Source: Energy Charter Secretariat (2001), “WTO Rules Applying under the Energy Charter Treaty”, http://www.encharter.org/fileadmin/user_upload/document/WTO_Rules_applying_to_the_ECT_-_2002_-_ENG.pdf, p.50.

Subsidies are extensively granted to the energy sector around the world; both the fossil fuel sector and the renewable and alternative energy sectors have benefited from them. The amount of subsidies for renewable energy is growing as a response to energy security concerns and climate change (mainly in the United States and the European Union). Potential areas of conflict with WTO rules are related to the Agreement on Subsidies and Countervailing Measures (ASCM)¹⁵⁵, if renewable energy subsidies are contingent upon export- or import-substitution or they cause adverse effects. Another conflicting area is the absence of a GATT Article XX provision in the ASCM for the use of certain trade-distortive subsidies for environmental purposes may be justified.¹⁵⁶

Renewable fuels for transport also benefit from exemptions and, in a few countries, from production bounties. Furthermore, in some cases the access to government support schemes is

Trade and Economic Integration, Graduate Institute of International and Development Studies, Geneva,

<http://www.cepr.org/press/CTEI-CEPR.pdf>, pp. 83-84

¹⁵⁵ http://www.wto.org/english/docs_e/legal_e/24-scm_01_e.htm

¹⁵⁶ Cottier T., *et. al.* (2010), *op. Cit.*, p.11

made conditional upon meeting certain minimum levels of domestic content.¹⁵⁷

In regard to energy services, a few WTO members undertook limited commitments in three energy-related sectors: services incidental to mining, services incidental to energy distribution, and pipeline transportation of fuels. It is worth noting that energy-related activities which are not exclusive to the energy industry are covered by other services sectors, such as transport, distribution, construction, consulting, and engineering. One exemption to most-favored nation (MFN) treatment (i.e. non-discrimination) has been made in pipeline transportation of fuels.¹⁵⁸

Energy services may be traded through Mode 1 (cross-border trade), Mode 3 (foreign commercial presence), and Mode 4 (movement of natural persons). One of the hurdles in energy services negotiation is the definition and classification of issues, especially the transmission and distribution of electricity and gas. There is no separate classification of energy services in the current WTO Sectoral Classification List (W/120), although aspects are covered under other categories.

Within the current GATS negotiations on Energy Services, some proposals on energy services have been submitted, for instance by Cuba, Venezuela, Japan, EC, Canada and US. In addition, Norway and Chile have also tabled multi-sectoral proposals, which touch upon energy services sector.¹⁵⁹ The box below highlights the

¹⁵⁷ Bahar, Heymi, Egeland, Jagoda and Steenblik, Ronald (2012), “Domestic Incentive Measures for renewable Energy with Possible Trade Implications”, OECD Trade and Investment Papers, COM/TAD/ENV/JWPTE(2011)46/FINAL, [http://search.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=COM/TAD/ENV/JWPTE\(2011\)46/FINAL&docLanguage=En](http://search.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=COM/TAD/ENV/JWPTE(2011)46/FINAL&docLanguage=En)

¹⁵⁸

http://www.wto.org/english/tratop_e/serv_e/energy_e/energy_e.htm

¹⁵⁹ The country proposals are contained in the following WTO documents: S/CSS/W/60 (European Union); S/CSS/W/58 (Canada); S/CSS/W/88 (Chile); S/CSS/W/59 (Norway); S/CSS/W/24, 27 (United States); S/CSS/W/69 (Venezuela); S/CSS/W144 (Cuba); and S/CSS/W42 (Japan).

objectives identified by WTO members for energy services negotiations:

Box 15: Objectives for energy services negotiations within the WTO

Scope of commitments

-meaningful commitments, based on the Central Product Classification, for all activities in the energy services sector and across all modes of supply

-commitments in the oil and gas sector, e.g. for exploration services, services incidental to mining, technical testing and analysis, and toll refining services

-ownership of natural resources is outside the scope of the negotiations.

Regulatory issues and additional commitments for negotiation

-need to ensure access to energy, reliability of supply, protection of consumers and the environment ('right to regulate')

Scheduling issues to be addressed

-use of the Scheduling Guide for Energy Services (JOB(03)/89) tabled by some members for scheduling commitments in energy and energy-related services in the WTO

-the absence of a specific energy services section in the WTO Classification List (MTN.GNS/W/120) should not prevent the scheduling of commitments as the Scheduling Guidelines (S/L/92) provide sufficient flexibility.

Source: WTO website, http://www.wto.org/english/tratop_e/serv_e/energy_e/energy_e.htm and WTO Document TN/S/23

Overall, the proposals made by the WTO members show that there are a number of issues about energy services under discussion including:

- The scope of energy services and improvement of current classification, including through a possible checklist which could be used as a tool to facilitate negotiations in WTO and at regional levels (RTAs).
- Whether or not the classification should take account of the specificity of different energy markets in terms of differences in energy sources and diversity in regulatory frameworks.
- The suitability of developing an instrument specific to the energy services sector and benchmarking it on the Reference Paper on Basic

Telecommunications and the possible content (e.g. development concerns to link in a clear manner energy services and development –including the achievement of public services goals-and promotion of competition and of foreign investment in the energy sector consistent with development goals.)

- Subsidies in the current world trade of energy services and goods
- Restrictive measures in modes of supplies for energy services
- The ownership of natural resources

Furthermore, there are unresolved controversial issues derived from the fact that the fundamental divide between goods and services does not offer an appropriate basis for addressing and regulating energy in an integrated manner. This is typically the case of electricity, which is traditionally treated as a good but, by its nature and its dependence upon grids, it is much more like a service, or perhaps a mixture of both. There is no clear approach to defining energy in terms of goods and services. And services relating to energy are not properly defined under GATS. Hence, depending on whether energy is qualified as a good or a service, there are different and competing divergent international rules to be applied.¹⁶⁰

Trade and Development

Overall, access to energy varies dramatically between countries and regions. Three groups can be identified in terms of energy: producers, users and transmitters of energy. The negotiation of defensive and offensive interests of countries varies according to these groupings. There are countries having energy reserves but lacking the means to extract and use them. On the other hand there are some developing and least developed countries that depend on energy imports. For developing and least developed countries, access to clean energy is crucial to support mitigation efforts in order to stop climate

¹⁶⁰ Cottier T., et. al. (2010), op. Cit., p.7

warming. Through a Green Plurilateral+++ Agreement rich countries in energy resources can provide preferential treatment conditions to ensure the access to energy of those LI-DCs and LDCs dependent on energy imports.

A quick overview of minutes of the meetings of these organs indicates that the main issues discussed within the Committee on Trade and Environment is the elimination of tariffs and non-tariff barriers on environmental goods and services and technical assistance. While the main issues covered by the Committee on Trade and Development are: technical assistance, monitoring mechanism, preferential rules of origin in Agriculture and NAMA for LDCs, and revision of special and differentiated treatment provisions.

Despite the negotiating proposals made by the WTO members, they have not been able to make much progress within each of the three sectors (environment, energy and trade & development) and, lamentably, have not been able to explore cross-sector concessions which would be beneficial for all parties concerned whether developed or developing. LI-DCs and especially LDCs have to face multiple challenges ranging from poverty, political instability, lack of supply of exportable products and services to climate change.¹⁶¹ LDCs in particular lack continuous access to energy, water, and food and development aid. And as a consequence their need for energy results in more cutting of woods which in turn leads to more deforestation, drought and, overall, climate warming.

A Green Plurilateral+++ Agreement could bundle three sectors into a tri-sector plurilateral¹⁶²

¹⁶¹ Policy options for low income countries covering energy, development and environmental concerns need to be repositioned in a less ideological frame see e.g. options for Bolivia at: <http://www.globalsubsidies.org/en/subsidywatch/commentary/bolivia-s-energy-sector-intervention-a-missed-opportunity-economic-devel>

¹⁶² Plurilateral agreements within WTO law offer an alternative to the patchwork trade policy environment of today with the inflation of FTAs, RTAs, IIAs and BITs. GPA for instance works to the satisfaction of its members, China and India expressed interest in joining and DSP remains viable options for litigation within WTO law. It could actually also be the solution to the current DDA impasse. A WTO plurilateral covering the three sectors, limiting benefits to members only would also prevent carbon free riding and encourage joint

agreement consisting of namely a) energy (goods and services), b) environment (goods and services) and c) trade (Preferential Trade Agreements) and development (Aid-for-Trade, Enhanced Integrated Framework, TRTAs). Such a plurilateral deal could help link green objectives with trade and development interests of developed and developing countries.

As pointed out by the OECD, green growth in developing countries requires learning on how to generate value in international markets from environmental or natural resource assets.¹⁶³ Trade facilitation can play a key role in supporting developing countries' transition into a green economy. However, continuous efforts to facilitate international trade in goods and services need to be further encouraged in order to foster international markets for green goods and services and to remove tariff and non-tariff barriers.¹⁶⁴ The box below identifies the role for Aid-for-Trade in fostering markets for green goods and services.

WTO-UNFCCC alignment. See CSEND Policy Brief No. 7 (2012) (<http://www.csend.org/csend-policy-briefs/item/310-csend-policy-briefs>) and WTO Public Forum (2012), Session 29 organized by CSEND on "Plurilateralism Against Multilateralism? A Multi Stakeholder Perspective", Geneva, http://www.wto.org/english/forums_e/public_forum12_e/programe_e.htm.

¹⁶³ OECD (2013), "Putting Green Growth at the Heart of Development", OECD Green Growth Studies, http://www.keepeek.com/Digital-Asset-Management/oecd/development/putting-green-growth-at-the-heart-of-development_9789264181144-en, p. 136

¹⁶⁴ For an analysis of non-tariff barriers in the renewable energy sector see UNCTAD (2009), "World Trade Law and Renewable Energy: The Case of Non-Tariff Barriers", http://unctad.org/en/Docs/ditcted20085_en.pdf

Box 16: OECD's view on the role of Aid-for-Trade in fostering markets for green goods and services

Motivated by the role of trade as an engine of economic growth and poverty reduction, the Aid-for-Trade Initiative was launched by a group of development co-operation agencies to reduce transaction costs and strengthen the capacity of developing countries for trade. It provides assistance for enhancing capacities in trade policy and regulations, and addressing adjustment costs incurred by trade reforms. It also provides support through trade infrastructure development and production capacity development projects, and through assistance in implementing trade agreements. The donor community increasingly considers the Aid-for-Trade Initiative as a mechanism for mitigating climate change and stimulating green growth in developing countries, in part because of the stringent environmental conditions attached to the trade agreements, but also because such support often targets capacities for trading green goods and services. Recently these programmes have helped developing countries adopt organic standards, enhance value chain development, train officials in trade policy for green goods and services and environmental protection measures, and participate in regional and multilateral trade and environmental negotiations (OECD, 2012f).

Source: OECD, (2012), Aid for Trade and Green Growth: State of the Play, OECD, Paris,

Closing remarks

The Green Plurilateral+++ Agreement is a “think outside of the box” solution to help LI-DCs and LDCs to face multiple challenges ranging from poverty, political instability, lack of supply of exportable products and services to climate change.

The negotiation of a Green Plurilateral+++ Agreement can have two different alternatives in terms of scope. A narrow-scope option would be the negotiation of a plurilateral agreement on environmental goods and services (which would also encompass green energy goods and services).¹⁶⁵ In addition, the goods and services negotiations should include all members - developed and developing- while the capacity building should cover developing countries and LDCs, with an emphasis on the latter.

On the other hand, a broader approach to the negotiations of a Green Plurilateral+++ Agreement would consist of a trade-off of cross-sector concessions (environment, energy and trade & development) which would be beneficial for all parties concerned whether developed or developing.

¹⁶⁵ The environmental and green energy services will all be negotiated as part of the current TISA (Trade in Services Agreement) negotiations. That would leave trade facilitation and capacity building for LDCs which have their own tracks and in the latter case does not need a formal negotiation per se.

The negotiation would involve countries having energy reserves (both producers and transmitters) such as OECD+ and BRICS countries as well as some energy endowed LI-DCs and LDCS (normally net energy importers).

The needed linkages of the Green Tri-sectoral Agreement (e.g. energy, environment and development) should be negotiated in the Committee on Trade and Environment and the Committee on Trade and Development. At present, energy issues are discussed in the Committee on Trade and Environment while energy services are discussed in the Council of Trade in Services. The three sectors should be put together into one new committee.

Such a green plurilateral agreement would envisage the application of a carbon tax to exports and imports of fossil fuels and would establish the necessary conditions for allowing LI-DCs and LDCs to import clean energy at a lower price.

Following the experience of the Swiss formulas¹⁶⁶ in tariff negotiations in agriculture, a coefficient of reduced price for energy goods could be established, based on the countries' Gross National Income (GNI), per capita Gross

¹⁶⁶

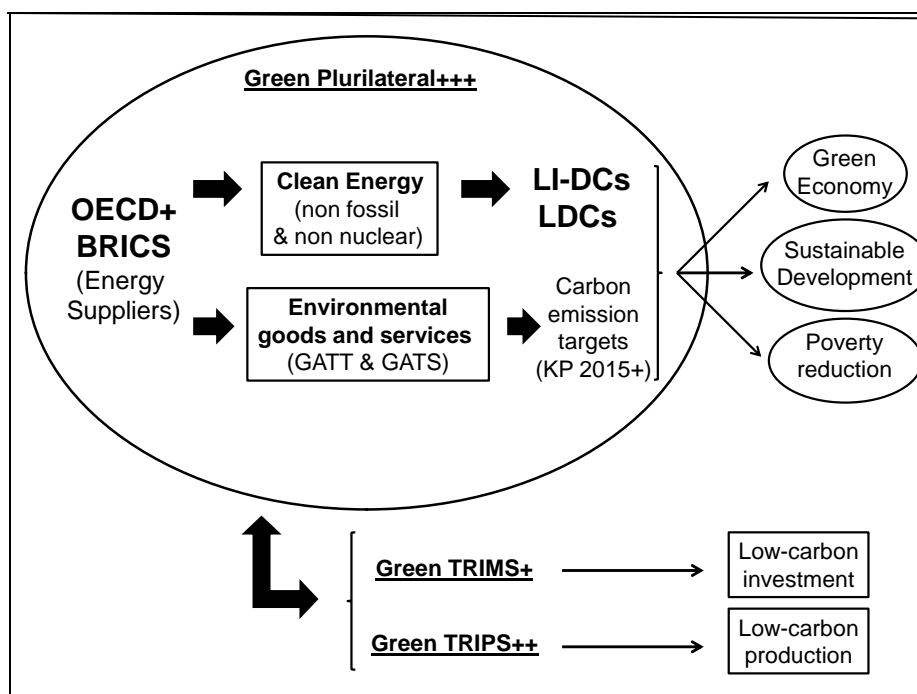
http://www.wto.org/english/tratop_e/agric_e/agnegs_swissformula_e.htm

Domestic Product (GDP), and availability of energy resources.

If adaptation comes about, it could be inadvertently a form of subsidy by developed countries having green technology. Why would this be acceptable? As part of the adaptation envelop, natural resource rich countries would contribute to reduce climate change by giving access to energy importer LI-LDCs and LDCs. In

exchange, energy importing LI-DCs and LDCs would agree to set carbon emissions targets and implement them. LDCs would get a quota of cheaper and cleaner energy provided they agree on specific carbon reduction targets. Avoiding a simple subsidization of wasteful consumption of energy, the access to cheaper energy would be granted to encourage LDCs to be energy efficient, not to raise expectation of being subsidized agreeing to carbon emission targets.

Figure 4: Green TRIMS+, Green TRIPS++, Green Plurilateral+++



Source: Own elaboration, © CSEND, 2013

As depicted in the graph above, the solution of a green plurilateral agreement is a complementary solutions to those proposed earlier in this policy paper, namely the green TRIMS+ and the green TRIPS ++. In order to encourage the necessary low carbon investment and production in LDCs, a green approach to TRIMS and TRIPS is needed. This approach would target developing countries in general, in order to facilitate their access to green technologies.

Overall, a greening of the WTO framework is needed to reduce barriers to the global trade of environmental goods and services. Adoption of a similar greener approach to GATT and GATS is required. While a comprehensive green plurilateral agreement would facilitate the access to clean energy, a green approach to TRIMS and TRIPS would allow developing countries to successfully achieve transition into the green economy by fostering low carbon investment and production.

Chapter 8

Conclusion and Recommendations 167

The WTO and UNFCCC frameworks are committed to fostering sustainable development and to fighting climate change. However, these two major multilateral regulatory treaties are facing impasses and, should the impasses last for much longer, possible paralysis and decomposition of its existing rule making mechanisms might occur. UNFCCC and DDA/WTO could implode eliciting the need for international governance arrangements of climate change and international trade and development. Conversely, WTO could break up into a patchwork of FTAs/RTAs fragmenting into decoupled international relations where important powers could be enticed to revert back to old style dominance and “take-it-or-leave-it” international relationships of a bilateral kind.

The implementation of a trade measure will be a key factor for the dispute settlement body because it is not enough to justify such measures. Indeed, it is necessary to justify how to implement them in order to avoid a *de facto* discrimination. Although there is room for unilateral tariff reductions, the conclusion of the Doha Round remains a collective action problem. As such, it circumvents the UNFCCC process which is grounded on the principle of “common but differentiated responsibilities”. However, the question whether “common but differentiated responsibilities” should be applied at the country or sector level still remains. Both the WTO and the UNFCCC negotiations face the same challenges: in both negotiations there are very

heterogeneous members with very different interests who have to reach consensus.

The longer no solutions are found dealing with the relentless increase of carbon and greenhouse gas emissions, the surer climate warming will go up. Technical solutions did not help combat climate change. Drastic and normative solutions are required. More straightforward solutions are needed instead of complicated technical solutions at micro-levels which are well intended but offer no stringent reduction of climate warming.

In this context, there is an urgent call for re-considering TRIMS to foster green investment and to allow local content requirements, to ensure greening of the global value chains. Likewise, a green approach to TRIPS can provide a framework to support technology transfer into LI-DCs and LDCs in order to promote the development of low carbon production to fight climate warming. And finally, a green plurilateral agreement could help narrow development gaps between developed and developing countries in the interest of safeguarding sustainability and arresting of climate warming.

Hence, a cross-regime agreement or cooperation between trade governance (WTO) and climate change (UNFCCC) could be a key driver and determinant to ensure low carbon investment. Different international organizations, world leaders, civil society organizations and representatives from the academy have made proposals addressing the issues of green investment but from different cross-regime perspectives. However, in some cases, the narratives do not refer at all to the WTO rules or to the UNFCCC framework.

WTO Dispute Settlement cases pertaining to environment already exist and have been adjudicated. Bearing in mind the solutions proposed in this policy paper, there is a need to further analyze this jurisprudence in order to find arguments to support the implementation at the national level of measures fostering low carbon investment and low carbon production. More can be done proactively in order to explore legal

¹⁶⁷ This section is based on Saner (2011), “International governance options to strengthen WTO and UNFCCC”, <http://www.diplomacydialogue.org/publications/environmental-diplomacy/101-international-governance-options-to-strengthen-wto-and-unfccc>

arguments to support a green approach to TRIMS and TRIPS to help developing countries fostering low carbon investment and production to fight climate warming.

What is needed is more “thinking outside of the box”. A great majority of countries cling to WTO but do not want to ensure the successful closure of the DDA thereby endangering the future functioning of the rump WTO. An important number of Members are concerned about environmental degradation and hope to halt the nefarious impact of climate change but seem unable to agree on mitigation, adaptation and new commitments. This policy paper outlines several options which could be envisaged within the WTO context to provide solutions to both stalling multilateral treaty making bodies namely: **Green TRIMS+**, **Green TRIPS++**, and **Green Plurilateral+++**.

There is a need to facilitate technology transfer to support green investments and green production in LI-DCs and LDCs. Green technologies should be made available to empower highly polluted mega cities to stop and reduce unsustainable levels of carbon emissions.

The ultimate objective is to reduce climate warming by diminishing the level of carbon emissions. Private goods (green technologies) need to be made available as public goods. Traceability of who takes decisions in regards to FDI is complex but need to be made explicit to prevent monopolistic tendencies of green technology providers.

UNFCCC has not sufficiently addressed trade. Although country group obligations under UNFCCC are very much related to trade issues

(e.g. TRIPS and TRIMS issues) the UNFCCC does not provide enough legal provisions to link between climate change and trade. References made to trade are *de minimis*, the best approach would be to focus on WTO and to search for solutions to arrest climate warming, for instance, within a newly combined Committee on Trade, Development and Environment.

A plurilateral green agreement is needed to combine energy, environment and development in order to reach a sustainable solution to combat climate change. Plurilateral initiatives like the International Services Agreements and the Trans-Pacific Partnership, currently being discussed among some of the WTO Members suggest that a **Green Plurilateral+++ Agreement within the WTO on energy, environment and development** can be an alternative plurilateral approach to foster green investment and to support a coherent and a sustainable solution to climate change.

The WTO has general exceptions that allow for trade restrictions which would otherwise be inconsistent with mainstream obligations. Such public policy provisions for instance permit restrictions of trade in order to protect human, animal and plant life or health (Article XX b) and another to conserve exhaustible natural resources. Such measures would have to be used in a non-discriminatory way in both MFN and national treatment sense to arrest climate warming.

Overall, this policy paper showed the shortcomings of current trade and climate change regimes, suggesting the need for discontinuous change of trade practice and a search for solutions within the WTO.

Annex 1:

Environmental Disputes under the WTO and GATT ¹⁶⁸

Under the WTO

- > **European Communities — Measures affecting asbestos and asbestos-containing products**. WTO case No. 135. Ruling adopted on 5 April 2001. Case brought by Canada.
- > **United States — Import Prohibition of Certain Shrimp and Shrimp Products**, the “shrimp-turtle” case. WTO case Nos. 58 and 61. Ruling adopted on 6 November 1998. Case brought by India, Malaysia, Pakistan and Thailand. Recourse to Article 21.5 of the DSU. Ruling adopted on 21 November 2001. Case brought by Malaysia.
- > **United States — Standards for Reformulated and Conventional Gasoline**, WTO case Nos. 2 and 4. Ruling adopted on 20 May 1996. Case brought by Venezuela and Brazil.

Under GATT

- > **United States — Taxes on Automobiles**, ruling not adopted, circulated on 11 October 1994. Case brought by EU.
- > **United States — Restrictions on Imports of Tuna**, “son of tuna-dolphin”, ruling not adopted, circulated on 16 June 1994. Case brought by EU.
- > **United States — Restrictions on Imports of Tuna**, the “tuna-dolphin” case, ruling not adopted, circulated on 3 September 1991. Case brought by Mexico, etc.
- > **Thailand — Restrictions on the Importation of and Internal Taxes on Cigarettes**, ruling adopted on 7 November 1990. Case brought by US.
- > **Canada — Measures Affecting Exports of Unprocessed Herring and Salmon**, ruling adopted on 22 March 1988. Case brought by US.
- > **United States — Prohibition of Imports of Tuna and Tuna Products from Canada**, ruling adopted on 22 February 1982. Case brought by Canada.

¹⁶⁸ Source: WTO website, http://www.wto.org/english/tratop_e/envir_e/edis00_e.htm

Annex 2:

List of cases citing the TRIMS agreement in the request for consultations ¹⁶⁹

<u>DS456</u>	India — <i>Certain Measures Relating to Solar Cells and Solar Modules</i> (Complainant: United States)	<p>Consultations requested: 6 February 2013</p> <p>Current status: In consultations</p>
<u>DS452</u>	European Union and Certain Member States — <i>Certain Measures Affecting the Renewable Energy Generation Sector</i> (Complainant: China)	<p>Consultations requested: 5 November 2012</p> <p>Current status: In consultations</p>
<u>DS446</u>	Argentina — <i>Measures Affecting the Importation of Goods</i> (Complainant: Mexico)	<p>Consultations requested: 24 August 2012</p> <p>Current status: In consultations</p>
<u>DS445</u>	Argentina — <i>Measures Affecting the Importation of Goods</i> (Complainant: Japan)	<p>Consultations requested: 21 August 2012</p> <p>Current status: Panel established, but not yet composed</p>
<u>DS444</u>	Argentina — <i>Measures Affecting the Importation of Goods</i> (Complainant: United States)	<p>Consultations requested: 21 August 2012</p> <p>Current status: Panel established, but not yet composed</p>
<u>DS443</u>	European Union and a Member State — <i>Certain Measures Concerning the Importation of Biodiesels</i> (Complainant: Argentina)	<p>Consultations requested: 17 August 2012</p> <p>Current status: In consultations</p>
<u>DS438</u>	Argentina — <i>Measures Affecting the Importation of Goods</i> (Complainant: European Union)	<p>Consultations requested: 25 May 2012</p> <p>Current status: Panel established, but not yet composed</p>
<u>DS426</u>	Canada — <i>Measures Relating to the Feed-in Tariff Program</i> (Complainant: European Union)	<p>Consultations requested: 11 August 2011</p> <p>Current status:</p>

¹⁶⁹ Source: WTO website, http://www.wto.org/english/tratop_e/dispu_e/dispu_agreements_index_e.htm?id=A25#selected_agreement

		Panel report under appeal
<u>DS412</u>	Canada — Certain Measures Affecting the Renewable Energy Generation Sector (Complainant: Japan)	Consulations requested: 13 September 2010 Current status: Panel report under appeal
<u>DS359</u>	China — Certain Measures Granting Refunds, Reductions or Exemptions from Taxes and Other Payments (Complainant: Mexico)	Consulations requested: 26 February 2007 Current status: Settled or terminated (withdrawn, mutually agreed solution)
<u>DS358</u>	China — Certain Measures Granting Refunds, Reductions or Exemptions from Taxes and Other Payments (Complainant: United States)	Consulations requested: 2 February 2007 Current status: Settled or terminated (withdrawn, mutually agreed solution)
<u>DS342</u>	China — Measures Affecting Imports of Automobile Parts (Complainant: Canada)	Consulations requested: 13 April 2006 Current status: Implementation notified by respondent
<u>DS340</u>	China — Measures Affecting Imports of Automobile Parts (Complainant: United States)	Consulations requested: 30 March 2006 Current status: Implementation notified by respondent
<u>DS339</u>	China — Measures Affecting Imports of Automobile Parts (Complainant: European Communities)	Consulations requested: 30 March 2006 Current status: Implementation notified by respondent
<u>DS334</u>	Turkey — Measures Affecting the Importation of Rice (Complainant: United States)	Consulations requested: 2 November 2005 Current status: Implementation notified by respondent
<u>DS276</u>	Canada — Measures Relating to Exports of Wheat and Treatment of Imported Grain (Complainant: United States)	Consulations requested: 17 December 2002 Current status: Implementation notified by respondent

<u>DS275</u>	Venezuela, Bolivarian Republic of — Import Licensing Measures on Certain Agricultural Products (Complainant: United States)	Consulations requested: 7 November 2002 Current status: In consultations
<u>DS224</u>	United States — US Patents Code (Complainant: Brazil)	Consulations requested: 31 January 2001 Current status: In consultations
<u>DS195</u>	Philippines — Measures Affecting Trade and Investment in the Motor Vehicle Sector (Complainant: United States)	Consulations requested: 23 May 2000 Current status: Panel established, but not yet composed
<u>DS175</u>	India — Measures Affecting Trade and Investment in the Motor Vehicle Sector (Complainant: United States)	Consulations requested: 2 June 1999 Current status: Implementation notified by respondent
<u>DS146</u>	India — Measures Affecting the Automotive Sector (Complainant: European Communities)	Consulations requested: 6 October 1998 Current status: Implementation notified by respondent
<u>DS142</u>	Canada — Certain Measures Affecting the Automotive Industry (Complainant: European Communities)	Consulations requested: 17 August 1998 Current status: Implementation notified by respondent
<u>DS139</u>	Canada — Certain Measures Affecting the Automotive Industry (Complainant: Japan)	Consulations requested: 3 July 1998 Current status: Implementation notified by respondent
<u>DS105</u>	European Communities — Regime for the Importation, Sale and Distribution of Bananas (Complainant: Panama)	Consulations requested: 24 October 1997 Current status: Settled or terminated (withdrawn, mutually agreed solution)
<u>DS102</u>	Philippines — Measures Affecting Pork and Poultry (Complainant: United States)	Consulations requested: 7 October 1997 Current status:

		Settled or terminated (withdrawn, mutually agreed solution)
<u>DS81</u>	Brazil — Measures Affecting Trade and Investment in the Automotive Sector (Complainant: European Communities)	Consultations requested: 7 May 1997 Current status: In consultations
<u>DS74</u>	Philippines — Measures Affecting Pork and Poultry (Complainant: United States)	Consultations requested: 1 April 1997 Current status: Settled or terminated (withdrawn, mutually agreed solution)
<u>DS65</u>	Brazil — Certain Measures Affecting Trade and Investment in the Automotive Sector (Complainant: United States)	Consultations requested: 10 January 1997 Current status: In consultations
<u>DS64</u>	Indonesia — Certain Measures Affecting the Automobile Industry (Complainant: Japan)	Consultations requested: 29 November 1996 Current status: Implementation notified by respondent
<u>DS59</u>	Indonesia — Certain Measures Affecting the Automobile Industry (Complainant: United States)	Consultations requested: 8 October 1996 Current status: Implementation notified by respondent
<u>DS55</u>	Indonesia — Certain Measures Affecting the Automobile Industry (Complainant: Japan)	Consultations requested: 4 October 1996 Current status: Implementation notified by respondent
<u>DS54</u>	Indonesia — Certain Measures Affecting the Automobile Industry (Complainant: European Communities)	Consultations requested: 3 October 1996 Current status: Implementation notified by respondent
<u>DS52</u>	Brazil — Certain Measures Affecting Trade and Investment in the Automotive Sector (Complainant: United States)	Consultations requested: 9 August 1996 Current status: In consultations
<u>DS51</u>	Brazil — Certain Automotive Investment Measures (Complainant: Japan)	Consultations requested: 30 July 1996

		<p>Current status: In consultations</p>
<u>DS27</u>	<p>European Communities — Regime for the Importation, Sale and Distribution of Bananas (Complainants: Ecuador; Guatemala; Honduras; Mexico; United States)</p>	<p>Consulations requested: 5 February 1996</p> <p>Current status: Settled or terminated (withdrawn, mutually agreed solution)</p>

Annex 3:

List of cases citing the TRIPS agreement in the request for consultations ¹⁷⁰

<u>DS458</u>	Australia — Certain Measures Concerning Trademarks, Geographical Indications and Other Plain Packaging Requirements Applicable to Tobacco Products and Packaging (Complainant: Cuba)	Consultations requested: 3 May 2013 Current status: In consultations
<u>DS441</u>	Australia — Certain Measures Concerning Trademarks, Geographical Indications and Other Plain Packaging Requirements Applicable to Tobacco Products and Packaging (Complainant: Dominican Republic)	Consultations requested: 18 July 2012 Current status: In consultations
<u>DS435</u>	Australia — Certain Measures Concerning Trademarks, Geographical Indications and Other Plain Packaging Requirements Applicable to Tobacco Products and Packaging (Complainant: Honduras)	Consultations requested: 4 April 2012 Current status: In consultations
<u>DS434</u>	Australia — Certain Measures Concerning Trademarks and Other Plain Packaging Requirements Applicable to Tobacco Products and Packaging (Complainant: Ukraine)	Consultations requested: 13 March 2012 Current status: Panel established, but not yet composed
<u>DS409</u>	European Union and a Member State — Seizure of Generic Drugs in Transit (Complainant: Brazil)	Consultations requested: 12 May 2010 Current status: In consultations
<u>DS408</u>	European Union and a Member State — Seizure of Generic Drugs in Transit (Complainant: India)	Consultations requested: 11 May 2010 Current status: In consultations
<u>DS372</u>	China — Measures Affecting Financial Information Services and Foreign Financial Information Suppliers (Complainant: European Communities)	Consultations requested: 3 March 2008 Current status: Settled or terminated (withdrawn, mutually agreed solution)
<u>DS362</u>	China — Measures Affecting the Protection and Enforcement of Intellectual Property Rights (Complainant: United States)	Consultations requested: 10 April 2007 Current status: Implementation notified by respondent
<u>DS290</u>	European Communities — Protection of Trademarks and Geographical Indications for Agricultural Products and Foodstuffs (Complainant: Australia)	Consultations requested: 17 April 2003 Current status: Implementation notified by respondent
<u>DS224</u>	United States — US Patents Code (Complainant: Brazil)	Consultations requested: 31 January 2001 Current status: In consultations
<u>DS199</u>	Brazil — Measures Affecting Patent Protection (Complainant: United States)	Consultations requested:

¹⁷⁰ Source: WTO website, http://www.wto.org/english/tratop_e/dispu_e/dispu_agreements_index_e.htm?id=A26#selected_agreement

	States)	30 May 2000 Current status: Settled or terminated (withdrawn, mutually agreed solution)
<u>DS196</u>	Argentina — Certain Measures on the Protection of Patents and Test Data (Complainant: United States)	Consultations requested: 30 May 2000 Current status: Settled or terminated (withdrawn, mutually agreed solution)
<u>DS186</u>	United States — Section 337 of the Tariff Act of 1930 and Amendments thereto (Complainant: European Communities)	Consultations requested: 12 January 2000 Current status: In consultations
<u>DS176</u>	United States — Section 211 Omnibus Appropriations Act of 1998 (Complainant: European Communities)	Consultations requested: 8 July 1999 Current status: Report(s) adopted, with recommendation to bring measure(s) into conformity
<u>DS174</u>	European Communities — Protection of Trademarks and Geographical Indications for Agricultural Products and Foodstuffs (Complainant: United States)	Consultations requested: 1 June 1999 Current status: Implementation notified by respondent
<u>DS171</u>	Argentina — Patent Protection for Pharmaceuticals and Test Data Protection for Agricultural Chemicals (Complainant: United States)	Consultations requested: 6 May 1999 Current status: Settled or terminated (withdrawn, mutually agreed solution)
<u>DS170</u>	Canada — Term of Patent Protection (Complainant: United States)	Consultations requested: 6 May 1999 Current status: Implementation notified by respondent
<u>DS160</u>	United States — Section 110(5) of US Copyright Act (Complainant: European Communities)	Consultations requested: 26 January 1999 Current status: Authorization to retaliate requested (including 22.6 arbitration)
<u>DS153</u>	European Communities — Patent Protection for Pharmaceutical and Agricultural Chemical Products (Complainant: Canada)	Consultations requested: 2 December 1998 Current status: In consultations
<u>DS125</u>	Greece — Enforcement of Intellectual Property Rights for Motion Pictures and Television Programs (Complainant: United States)	Consultations requested: 4 May 1998 Current status: Settled or terminated (withdrawn, mutually agreed solution)
<u>DS124</u>	European Communities — Enforcement of Intellectual Property Rights for Motion Pictures and Television Programs (Complainant: United States)	Consultations requested: 30 April 1998 Current status: Settled or terminated (withdrawn, mutually agreed solution)

<u>DS115</u>	European Communities — Measures Affecting the Grant of Copyright and Neighbouring Rights (Complainant: United States)	Consulations requested: 6 January 1998 Current status: Settled or terminated (withdrawn, mutually agreed solution)
<u>DS114</u>	Canada — Patent Protection of Pharmaceutical Products (Complainant: European Communities)	Consulations requested: 19 December 1997 Current status: Implementation notified by respondent
<u>DS86</u>	Sweden — Measures Affecting the Enforcement of Intellectual Property Rights (Complainant: United States)	Consulations requested: 28 May 1997 Current status: Settled or terminated (withdrawn, mutually agreed solution)
<u>DS83</u>	Denmark — Measures Affecting the Enforcement of Intellectual Property Rights (Complainant: United States)	Consulations requested: 14 May 1997 Current status: Settled or terminated (withdrawn, mutually agreed solution)
<u>DS82</u>	Ireland — Measures Affecting the Grant of Copyright and Neighbouring Rights (Complainant: United States)	Consulations requested: 14 May 1997 Current status: Settled or terminated (withdrawn, mutually agreed solution)
<u>DS79</u>	India — Patent Protection for Pharmaceutical and Agricultural Chemical Products (Complainant: European Communities)	Consulations requested: 28 April 1997 Current status: Implementation notified by respondent
<u>DS59</u>	Indonesia — Certain Measures Affecting the Automobile Industry (Complainant: United States)	Consulations requested: 8 October 1996 Current status: Implementation notified by respondent
<u>DS50</u>	India — Patent Protection for Pharmaceutical and Agricultural Chemical Products (Complainant: United States)	Consulations requested: 2 July 1996 Current status: Implementation notified by respondent
<u>DS42</u>	Japan — Measures concerning Sound Recordings (Complainant: European Communities)	Consulations requested: 28 May 1996 Current status: Settled or terminated (withdrawn, mutually agreed solution)
<u>DS37</u>	Portugal — Patent Protection under the Industrial Property Act (Complainant: United States)	Consulations requested: 30 April 1996 Current status: Settled or terminated (withdrawn, mutually agreed solution)
<u>DS36</u>	Pakistan — Patent Protection for Pharmaceutical and Agricultural Chemical Products (Complainant: United States)	Consulations requested: 30 April 1996 Current status: Settled or terminated (withdrawn, mutually agreed solution)

DS28

Japan — **Measures Concerning Sound Recordings** (Complainant:
United States)

Consulations requested:
9 February 1996

Current status:
Settled or terminated (withdrawn,
mutually agreed solution)

Annex 4: GATS Commitments in Environmental Services¹⁷¹

Members	06.A.	06.B.	06.C.	06.D.	Total
Albania	X	X	X	X	4
Armenia	X	X	X	X	4
Australia	X	X	X		3
Austria	X	X	X	X	4
Bulgaria	X	X	X	X	4
Cambodia	X	X	X	X	4
Canada	X	X	X	X	4
Cape Verde	X	X	X	X	4
Central African Rep.				X	1
China	X	X	X	X	4
Colombia				X	1
Croatia	X	X	X	X	4
Czech Republic	X	X	X		3
Ecuador	X	X	X	X	4
El Salvador				X	1
Estonia	X			X	2
European Community	X	X	X	X	4
Finland		X		X	2
FYR Macedonia	X	X	X	X	4
Gambia	X		X		2
Georgia	X	X	X	X	4
Guinea	X		X		2
Hungary		X	X		2
Iceland	X	X	X	X	4
Israel	X	X	X	X	4
Japan	X	X	X	X	4
Jordan			X	X	2
Korea RP	X	X		X	3
Kuwait	X	X	X		3
Kyrgyz Republic	X	X	X	X	4
Latvia	X	X	X	X	4
Lesotho	X	X	X	X	4
Liechtenstein	X	X	X	X	4
Lithuania	X	X	X	X	4
Moldova	X	X	X	X	4
Morocco	X	X	X	X	4
Nepal	X	X	X		3
Norway	X	X	X	X	4
Oman	X	X	X	X	4
Panama				X	1
Poland				X	1
Qatar	X	X	X	X	4
Romania				X	1
Rwanda			X		1
Saudi Arabia	X	X	X	X	4
Sierra Leone	X	X	X	X	4

¹⁷¹ Source: WTO Services Database, <http://tsdb.wto.org/>

<u>Slovak Republic</u>	X	X	X		3
<u>Slovenia</u>	X	X	X	X	4
<u>South Africa</u>	X	X	X	X	4
<u>Sweden</u>	X	X	X	X	4
<u>Switzerland</u>	X	X	X	X	4
<u>Chinese Taipei</u>	X	X	X	X	4
<u>Thailand</u>	X	X	X	X	4
<u>Tonga</u>	X	X	X	X	4
<u>Turkey</u>	X	X	X		3
<u>Ukraine</u>	X	X	X	X	4
<u>United Arab Emirates</u>	X	X	X	X	4
<u>USA</u>	X	X	X	X	4
<u>Viet Nam</u>	X	X	X	X	4
Total	49	48	50	49	

Legend: 06.A. Sewage Services; 06.B. Refuse Disposal Services; 06.C. Sanitation and Similar Services; 06.D. Other

Annex 5:

Lists of Environmental Goods: WTO¹⁷², APEC and OECD¹⁷³

Table 1: 153 items list proposed by a group of WTO Members

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
1. AIR POLLUTION CONTROL					
209	Condensers for steam or other vapour power units.	840420		Used to cool gas streams to temperatures which allow the removal of contaminants, e.g. volatile organic compounds (VOC) like benzene.	Canada, Japan, New Zealand, United States
210	Parts for auxiliary plant for boilers, condensers for steam, vapour power unit.	840490		These parts are used in the repair and maintenance of the equipment classified under item 208 above. This secondary equipment is also used to support waste heat recovery processes, such as boilers mentioned above, in waste treatment, or renewable energy resource recovery applications.	United States
211	Producer gas or water gas generators, with or without their purifiers; acetylene gas generators and similar water process gas generators, with or without their purifiers.	840510	Include only those with purifiers	Purifiers remove contaminants (such as cyanide or sulphur compounds) produced in the manufacture of gases.	Canada, Korea, New Zealand, United States
235	Vacuum pumps.	841410	Industrial hoods for transportation or extraction of air pollutants such as exhaust gas or dust.	Air handling equipment. Used in a number of environmental applications, e.g. flue gas desulphurisation (the process by	Canada, Japan, New Zealand, United States

¹⁷² WTO (2007), "Non-Paper by Canada, the European Communities, Japan, Korea, New Zealand, Norway, the Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu, Switzerland, and the United States of America", Committee on Trade and Environment Special Session, Document JOB(07)/54, Geneva, 27 April.

¹⁷³ WTO (2002), "List of environmental goods – paragraph 31 (iii)", Note by the Secretariat, Document TN/TE/W/18, Geneva, 20 November.

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
				which sulphur is removed from combustion exhaust gas).	
237	Compressors of a kind used in refrigerating equipment	841430	Compressors used in air handling equipment.	Air handling equipment. Transport or extraction of polluted air, corrosive gases or dust.	Japan, New Zealand
238	Air compressors mounted on a wheeled chassis for towing.	841440	Air compressors used in the transportation or extraction of polluted air, corrosive gases or dust.	Air handling equipment. Transport or extraction of polluted air, corrosive gases or dust.	Japan, Korea, New Zealand
239	Fans other than table, floor, wall, window, ceiling or roof fans, with a self-contained electric motor of an output not exceeding 125 W.	841459	<i>Optional ex-out of fans for the transport or extraction of polluted air and corrosive gases or dust..</i>	Air handling equipment. Transport or extraction of polluted air, corrosive gases or dust. Transport or extraction of polluted air and corrosive gases or dust.	Canada, European Communities, Japan, Korea, New Zealand, United States
240	Air Pumps, air/oth. gas compressors and fans (excl. of 8414.10-8414.59); ventilating/recycling hoods incorp. a fan, whether or not fitted with filters (excl. of 8414.60).	841480	Industrial hoods; aerators; blowers; and diffusers.	Air handling equipment. Transport or extraction of polluted air, corrosive gases or dust.	Japan, Canada, Chinese Taipei, New Zealand, United States, European Communities, Korea
241	Air or vacuum pumps, air or other gas compressors and fans; ventilating or recycling hoods incorporating a fan, whether or not fitted with filters: Parts.	841490	Parts for 841410x, 841430, 841440, and 841480x. <i>Optional ex-out may include: 841459x.</i>	Air handling equipment. Transport or extraction of polluted air, corrosive gases or dust. Transport or extraction of polluted air and corrosive gases or dust.	Canada, Japan, European Communities, New Zealand

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
251	Machinery for liquefying air or other gases.	841960		For separation and removal of pollutants through condensation.	Canada, Chinese Taipei, Korea, Japan, New Zealand, United States
252	Machinery, plant or laboratory equipment, whether or not electrically heated (excluding furnaces, ovens and other equipment of heading 85.14), for the treatment of materials by a process involving a change of temperature such as heating, cooking, roasting, distilling, rectifying, sterilising, pasteurising, steaming, drying, evaporating, vaporising, condensing or cooling, other than machinery or plant of a kind used for domestic purposes; instantaneous or storage water heaters, non-electric.	841989	Evaporators and dryers, for water and waste water treatment. Condensers and cooling towers. Biogas reactors; digestion tanks and biogas refinement equipment.	For processing water and waste water and the separation and removal of pollutants through condensation. Includes fluidised bed systems (bubbling, circulating, etc.) and biomass boilers. Can also help anaerobic digestion of organic matter.	Canada, European Communities, Japan, New Zealand
259	Filtering or purifying machinery and apparatus for gas (other than intake air filters for internal combustion engines).	842139	<i>Optional ex-out may include: Catalytic converters / Gas separation equipment / Pneumatic fluid power filters rated at 550 kPa or greater / Industrial gas cleaning equipment / Electrostatic filters (precipitators).</i>	Physical, mechanical, chemical or electrostatic filters and purifiers for the removal of COV, solid or liquid particles in gases, etc.	Canada, European Communities Chinese Taipei, Japan, Korea, United States
399	Instruments for measuring or checking the flow, level, pressure or other variables of liquids or gases.	902610	Air quality monitors; and dust emissions monitors.	Monitors to measure air pollution; basis for possible correcting measures (notably in view of health effects).	European Communities

2. MANAGEMENT OF SOLID AND HAZARDOUS WASTE AND RECYCLING SYSTEMS

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
68	Other plates, sheets, film, foil and strip, of polymers of ethylene, non-cellular and not reinforced, laminated, supported or similarly combined with other materials: Plates, sheets, film, foil and strip of plastics, not self-adhesive, non-cellular, not reinforced or laminated etc., of polymers of ethylene.	392010	HDPE or flexible membrane landfill liners and/or covers for methane collection; Plastic and polyethylene geomembranes for soil protection, water tightness, anti-erosion of soil..	Used to line landfills to prevent leachate (water run-off) from contaminating groundwater resources. Also used to cover landfills and prevent methane from escaping into atmosphere. These membrane systems are also used for the reinforcement and protection of soil, including under oil refineries, gas stations etc.	United States, European Communities
193	Aluminium casks, drums, cans, boxes and similar containers (including rigid or collapsible tubular containers), for any material (other than compressed or liquefied gas), of a capacity not exceeding 300 l, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment.	761290	Waste containers, including those for municipal or dangerous waste.	Containers of any material, of any form, for liquid or solid waste, including for municipal or dangerous waste.	European Communities
200	Steam or other vapour generating boilers (other than central heating hot water boilers capable also of producing low pressure steam); super-heated water boilers: and part of the boilers of 840211 - 840220	840219	Biomass boilers.	Boilers for the production of heat and power on the basis of (renewable) biomass fuels.	European Communities
206	Steam or other vapour generating boilers (other than central heating hot water boilers capable also of producing low pressure steam); super-heated water boilers.	840290	Parts for 840219x.	Parts for the biomass boilers described above.	European Communities
208	Auxiliary plant for use with	840410	Auxiliary plant for use with 840219x.	Components of industrial air pollution control plant which	Canada, European

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
	boilers of heading 84.02 or 84.03 (for example, economisers, super-heaters, soot removers, gas recoverers); condensers for steam or other vapour power units.			minimise the release of pollutants into the atmosphere. This equipment is also used to support waste heat recovery processes in waste treatment, or renewable energy resource recovery applications.	Communities, Japan, Korea, New Zealand, United States
244	Other industrial or laboratory furnaces and ovens, including incinerators, non-electric	841780	<i>Optional ex-outs may include: waste incinerators; heat or catalytic incinerators.</i>	These products are used to destroy solid and hazardous wastes. Catalytic incinerators are designed for the destruction of pollutants (such as VOC) by heating polluted air and oxidation of organic components.	Canada, Chinese Taipei, New Zealand, Korea, Japan, United States
245	Industrial or laboratory furnaces and ovens, including incinerators, non-electric: Parts.	841790	<i>Optional ex-outs may include: parts for 841780x.</i>	These parts can help maintain and repair products that are used to destroy solid and hazardous wastes. Similarly, the parts for catalytic incinerators can help maintain and repair items that can assist in the destruction of pollutants (such as VOC) by heating polluted air and oxidation of organic components.	Canada, Chinese Taipei, European Communities, Japan, Korea, New Zealand, United States
249	Distilling or rectifying plant.	841940	<i>Optional ex-outs may include: desalination systems; biogas refinement equipment; and solvent recycling plants.</i>	Desalination plants remove salt from water and are particularly important in conditions of water scarcity. Proper disposal of by-products is also required. - Biogas refinement equipment "upgrades" biogas resulting from organic matter to give it the same properties as natural gas. Allows the recovery and reuse of solvents, e.g. solvents used in the printing, painting or dry cleaning industries.	Canada, Chinese Taipei, European Communities, Japan, New Zealand, United States

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
263	Machinery for cleaning or drying bottles or other containers.	842220		Used to clean and dry bottles so that they can be recycled and re-used.	Canada, European Communities, Japan, Korea, United States
264	Machinery for cleaning or drying bottles or other containers: Parts.	842290	Parts for 842220.	Parts are used to assemble and maintain the above equipment.	European Communities
271	Tamping machines and road rollers.	842940	Self-propelled sanitary landfill compactors.	Used in solid waste treatment or recycling.	United States
277	Hydraulic presses for working metal.	846291	Shredders/balers/compactors for waste metals; hydraulic.	Assists in compacting and compressing metals, including for recycling.	Japan, Korea, United States, European Communities
279	Splitting, slicing or paring machines.	846596	Splitting, slicing or paring machines (specifically portable recyclers (grinders/shredders) portable (wood and waste recycling machinery)).	Used for recycling wood and other waste.	United States
280	Other machine tools not elsewhere specified or included	846599	Other parts of splitting, slicing or paring machines (specifically tree delimeter/ debarker/ chipper machinery (portable recyclers (grinders/ shredders))	Assists in recycling as with item 279.	United States
281	Parts and accessories suit. for use solely/princ. with the machines of 84.62/84.63.	846694	Parts for 846291x.	See above for item 277.	European Communities
285	Crushing or grinding machines.	847420		Used for solid waste treatment or recycling.	Chinese Taipei
290	Mixing, kneading, crushing, grinding, screening, sifting, homogenising, emulsifying or stirring machines not elsewhere specified in Chapter 84.	847982	Waste sorting, screening, crushing, grinding, shredding, washing and compacting devices. Agitator for wastewater treatment; flash mixer and flocculator.	Used to prepare waste for recycling; mixing of wastewater during treatment; preparing organic waste for composting; (composting can minimise the amount of waste going to landfill as well as recovering the valuable nutrient and energy content of the waste).	Chinese Taipei, European Communities, Japan, Korea, New Zealand, United States

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
291	Machines and mechanical appliances having individual functions, not specified or included elsewhere in this Chapter: Other.	847989		Machines and appliances designed for a wide range of areas of environmental management including waste, waste water, drinking water production and soil remediation. In-vessel composting systems can handle large amounts of waste and speed up decomposition. Trash compactors reduce the volume of solid waste, allowing more efficient transport and disposal.	Canada, Chinese Taipei, European Communities, Japan, New Zealand, United States
292	Parts of the mach. and mech. appls. of 84.79	847990	Parts for 847982x and 847989x.	See the environmental benefit under entry 291.	Canada, European Communities, New Zealand, Japan, United States
315	Other, including parts	850590	Electromagnet; parts of magnetic separator; magnetic pulley; suspended magnet and magnet drum.	Used to remove metal content from waste for recycling.	Canada, Chinese Taipei, Japan, New Zealand, United States
322	Resistance heated furnaces and ovens.	851410	<i>Optional ex-outs may include: waste incinerators and heat or catalytic incinerators.</i>	These products are used to destroy solid and hazardous wastes. Catalytic incinerators are designed for the destruction of pollutants (such as VOC) by heating polluted air and oxidation of	Canada, Chinese Taipei, Japan, New Zealand, United States

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
				organic components.	States
323	Furnaces and ovens; functioning by induction or dielectric loss.	851420	<i>Optional ex-outs may include: waste incinerators and heat or catalytic incinerators.</i>	These products are used to destroy solid and hazardous wastes. Catalytic incinerators are designed for the destruction of pollutants (such as VOC) by heating polluted air and oxidation of organic components.	New Zealand, Japan, Canada, Korea, Chinese Taipei, United States
324	Other furnaces and ovens.	851430	<i>Optional ex-outs may include: waste incinerators and heat or catalytic incinerators.</i>	Catalytic incinerators are designed for the destruction of pollutants (such as VOC) by heating polluted air and oxidation of organic components.	Canada, Chinese Taipei, European Communities, Japan, New Zealand, United States
325	Parts of industrial or laboratory electric furnaces and ovens; other laboratory induction or dielectric heating equipment.	851490	<i>Optional ex outs include: Parts for 851410x, 851430x and 851430x.</i>	Parts for the equipment listed will facilitate the destruction of pollutants (such as VOC) by heating polluted air and oxidation of organic components.	Canada, Chinese Taipei, Japan, Korea, New Zealand, United States
3. CLEAN UP OR REMEDIATION OF SOIL AND WATER					
255	Centrifuges, including centrifugal dryers, other than cream separators and clothes-dryers.	842119	Oil Skimmer.	Equipment used to remove oil floating on water and is commonly used for oil spill remediations	Canada, Japan, New Zealand, United States, Korea, European Communities
260	Parts of centrifuges, including centrifugal dryers.	842191	Parts for 842119x.	Used for the maintenance and repair of equipment that removes oil floating on water and is commonly used for oil spill remediation.	Canada, EC, Japan, Korea, New Zealand, United States

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
327	Electric space heating apparatus and electric soil heating apparatus; other.	851629	Electric soil heating apparatus.	Use heat to disinfect or remove organic compounds (e.g. pesticides, hydrocarbons) from soil, and to dry contaminated soil prior to treatment processes.	Japan, Korea, New Zealand
383	Other floating structures (for example, rafts, tanks, cofferdams, landing-stages, buoys and beacons): Other (other than inflatable rafts).	890790	Pollution protection booms, oil absorbent booms, oil containment booms.	Floating barriers to oil can prevent an oil slick from reaching sensitive locations or spreading out further. Oil absorbents soak up and remove the oil.	Canada, Chinese Taipei, European Communities, Japan, Korea, New Zealand, United States
4. RENEWABLE ENERGY PLANT					
173	Towers and lattice masts.	730820	Wind turbine tower.	Used to elevate and support a wind turbine for the generation of renewable energy.	United States, European Communities
192	Aluminium reservoirs, tanks, vats and similar containers, for any material (other than compressed or liquefied gas), of a capacity exceeding 300 l, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment: tanks etc, over 300 litres capacity, aluminium.	761100	<i>Optional ex-outs may include: Tanks or vats for anaerobic digesters for biomass gasification; cisterns, vats and reservoirs for waste and potable water; and solar pre-heating storage tank.</i>	Tanks, vats and containers for the production of biogas, waste water management, drinking water production and solar thermal energy purposes.	United States, European Communities
212	Steam and other vapour turbines (other than turbines for marine propulsion): Of an output exceeding 40 MW.	840681	<i>Optional ex-outs may include stationary steam turbines over 40 MW; Low temperature/ low pressure steam turbines for geothermal heat pump systems; and steam turbines for co-generation.</i>	Turbines designed for the production of geothermal energy (renewable energy) and co-generation ((CHP) which allows for a more effective use of energy than conventional generation).	United States, European Communities

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213	Steam turbines and other vapour turbines (other than for marine propulsion) of an output not exceeding 40 MW.	840682	<i>Optional ex-outs may include stationary steam turbines not over 40 MW; other vapour turbines; low temperature/ low pressure steam turbines for geothermal heat pump systems; and steam turbines for co-generation.</i>	Steam turbines are used to drive electrical generators to derive electrical power from environmental energy recovery operations. Note that these have an output capacity "not exceeding 40 MW".	United States, European Communities
214	Parts for steam and other vapour turbines.	840690	<i>Optional ex-outs may include parts suitable for use with stationary steam turbines over 40MW; stationary steam turbines not over 40 MW, other vapour turbines; parts for 840681x and 840682x.</i>	Parts used for repair and maintenance of energy recovery turbines listed in items 212 and 213 above.	United States
218	Hydraulic turbines and water wheels of a power not exceeding 1,000 kW .	841011		Hydroelectric power generation produces no greenhouse gas emissions.	Canada, European Communities, Japan, Korea, New Zealand, United States
221	Hydraulic turbines, water wheels, and regulators ; parts, including regulators.	841090	Parts for 841011.	Hydroelectric power generation produces no greenhouse gas emissions.	Canada, European Communities, Japan, Korea, New Zealand, United States
222	Other gas turbines of a power not exceeding 5,000 kW.	841181		Gas turbines for electrical power generation from recovered landfill gas, coal mine vent gas, or biogas (clean energy system). Note that these turbines do "not exceed 5,000 kW".	United States
224	Other gas turbines of a power exceeding 5,000 kW.	841182		Gas turbines for electrical power generation from recovered landfill gas, coal mine vent gas, or biogas (clean energy system). Note that these turbines do "exceed 5,000 kW".	United States
247	Instantaneous or storage water heaters, non-electric (other than instantaneous gas water heaters).	841919	Solar water heaters.	Uses solar thermal energy to heat water, producing no pollution. Use of solar water heating displaces the burning of other, pollution-creating fuels.	Canada, European Communities, Japan, New Zealand, United States

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253	Parts of machinery, plant and equipment of heading No 84.19	841990	<i>Optional ex-outs may include: Parts for 8419.19 ex, including for solar boiler/water heater; insulation, temperature sensor for solar boiler/water heater; Differential temperature controller for solar boiler/water heater; Evacuated glass tubes for solar boiler/water heater; Heat pipes for solar boiler/water heater. Parts of 841940x, 841950x, 841960, 841989x</i>	Parts used in the maintenance and repair of solar water heaters (etc). which use solar thermal energy to heat water, producing no pollution. Use of solar water heating displaces the burning of other, pollution-creating fuels.	Canada, Japan
300	Gears and gearing, other than toothed wheels, chain sprockets and other transmission elements presented separately; ball or roller screws; gear boxes and other speed changers, including torque converters.	848340	Gearboxes for wind turbines.	Gearboxes transform the (relatively slow) rotation of the blades of wind turbines into the speed required to produce (renewable) electricity	United States, European Communities
301	Clutches and shaft couplings (including universal joints).	848360	Clutches and shaft couplings imported for use with wind turbines to produce electricity.	Used for initial assembly, repair, and maintenance of wind energy systems	United States
305	AC generators (alternators), of an output not exceeding 75 kVA	850161		Used in conjunction with boiler and turbines (also listed here) to generate electricity in renewable energy plants. Must use these turbines and generators in combination to produce electricity from renewable fuels (e.g., biomass). Size is "not exceeding 75 kVA".	United States
306	AC generators (alternator), of an output exceeding 75 kVA but not exceeding 375 kVA	850162		Used in conjunction with boiler and turbines (also listed under items 212 and 213) to generate electricity in renewable energy plants. Must use these turbines and generators in combination to produce electricity from renewable fuels (e.g., biomass). Size is "exceeding 75 kVA but not exceeding 375 kVA"	United States
307	AC generators (alternator), of an output exceeding 375 kVA but not exceeding 750 kVA	850163		Used in conjunction with boiler and turbines (also listed here under items 212 and 213) to generate electricity in renewable energy plants. Must use these turbines and generators in combination to produce electricity from renewable fuels (e.g., biomass). Size is "exceeding 375 kVA but not exceeding 750 kVA."	United States

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308	AC generators (alternator), of an output exceeding 750 kVA	850164		Used in conjunction with boiler and turbines (also listed under items 212 and 213) to generate electricity in renewable energy plants. Must use these turbines and generators in combination to produce electricity from renewable fuels (e.g., biomass). Size is "exceeding 750 kVA."	United States
310	Other electric generating sets: Wind-powered.	850231		Electricity generation from a renewable resource (wind).	Canada, European Communities, Japan, New Zealand, Switzerland, United States
311	Electric generating sets and rotary convertors: other	850239	<i>Optional ex-outs may include: combined heat and power systems using biomass and/or biogas; Portable solar power generation equipment; solar power electric generating sets; Small hydro powered generating plant; Wave power generating plant; and Gas turbine sets for biomass plants.</i>	Combined heat and power systems produce usable power (usually electricity) and heat at the same time. Micro combined heat and power systems are very efficient for domestic use, particularly in places where reticulated natural gas and hot water central heating are the norm. 'Distributed generation' also minimises transmission losses through national grids, reducing the need to increase centralised generating capacity and transmission networks.	New Zealand, European Communities, United States
313	Parts suitable for use solely or principally with the machines of heading 85.01 or 85.02.	850300	Parts for 850231 and optional ex-out may include : 850239x.	Parts of the generators and generating sets listed under item 310 (for renewable energy systems). Relevant parts include for instance nacelles and blades for wind turbines.	European Communities, Switzerland, United States
314	Static converters	850440	Inverters for use with machines of 850239 and 854140 to produce electricity.	Converts solar energy into electricity and can be used to convert DC current from the photovoltaic/solar cells into conventional AC electricity which can run many household and office products such as, kitchen appliances, microwaves, TV's, radios, computers and so on.	European Communities, United States
344	Photosensitive semiconductor	854140	Photovoltaic cells, modules and panels.	Solar photovoltaic cells generate electricity in an environmentally	Canada, European

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
	devices, including photovoltaic cells whether or not assembled in modules or made up into panels; light emitting diodes.			benign manner (with no emissions, noise or heat generated). They are particularly suited to electricity generation in locations remote from an electricity grid.	Communities, Japan, New Zealand, United States
384	Optical fibres and optical fibre bundles; optical fibre cables other than those of heading 85.44; sheets and plates of polarising material; lenses (including contact lenses), prisms, mirrors and other optical elements, of any material, unmounted, other than such elements of glass not optically worked: Other: Lenses prisms mirrors optical element not optically worked.	900190	Solar concentrator systems.	Used to concentrate and intensify solar power in a solar energy system.	United States
385	Lenses, prisms, mirrors and other optical elements, of any material, mounted, being parts of or fittings for instruments or apparatus, other than such elements of glass not optically worked: Other: Prism, mirrors, mounted and parts and accessories, not elsewhere specified or included	900290	Solar concentrator systems.	Used to concentrate and intensify solar power in a solar energy system.	United States
435	Automatic regulating or controlling instruments, other	903289	<i>Optional ex-outs may include: Heliostats, temperature sensor for solar boiler/water heater; Differential temperature controller for solar boiler/water heater.</i>	These include other automatic voltage and current regulators which have renewable energy applications as well as other process control instruments and apparatus for temperature, pressure, flow and level, and humidity applications.	Canada, Japan, Korea, New Zealand, United States

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
456	Boards, panels, consoles, desks, cabinets and other bases, equipped with 2 or more app. of 85.35/85.36, for electrical control..., for a voltage not exceeding 1000V	853710	Photovoltaic system controller.	Device to control the functioning of the PV system.	European Communities
457	Electric accumulators, including separators thereof, whether or not rect. (incl. square), lead-acid (exclusive of 8507.10)	850720	Deep discharge (solar) battery.	Provides for energy storage in off-grid PV systems. Are designed to be discharged down to 50per cent or more without damage so that they can supply power over a long period of time.	European Communities
475	Compression-type refrigerating, freezing equipment whose condensers are heat exchangers; Refrigerating, freezing equipment not elsewhere specified in 84.18; heat pumps and Air-conditioning machines incorporating a refrigerating unit and a valve for reversal of the cooling/heat cycle (reversible heat pumps)	841861; 841869 and 841581	Geothermal heat pump system.	Such systems transfer ("pump") the heat available in land and water masses to either heat or cool buildings.	European Communities
5. HEAT AND ENERGY MANAGEMENT					
154	Glass fibres (including glass wool) and articles thereof (for example, yarn, woven fabrics): Mats	701931	Mats for soundproofing and thermal insulation of buildings.	These mats help save energy and reduce noise levels in buildings.	European Communities
250	Heat exchange units, whether or not electrically heated	841950	<i>Optional ex-out may include heat exchangers for use in renewable energy system.</i>	Some heat exchangers are specifically designed for use in relation to renewable energy sources such as geothermal energy .	Canada, European Communities, Japan, United States

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412	Gas meters -including calibrating meters thereof	902810		Meters are necessary to measure and regulate use and hence enable more efficient use of the resource. In particular, these gas meters are generally designed for use with natural gas and propane, but may include those designed for other gases such as helium.	Canada, European Communities, Japan, New Zealand, United States
413	Liquid meters including calibrating meters thereof	902820	<i>Optional ex-out may include: Water consumption meters.</i>	These liquid meters include those designed to measure potable water consumption to allocate costs, assist the financial management of water systems, and encourage conservation of a scarce resource.	Canada, European Communities, Japan, New Zealand, United States
414	Electricity meters	902830		These products include those designed to measure electricity flow in residential, commercial, and industrial consumption of electricity.	Canada, Japan, New Zealand, United States
415	Parts and accessories for articles of subheading 9028:	902890	<i>Optional ex-out may include: Parts for 902810, 902820[x], 902830.</i>	These are parts and accessories for the gas, liquid, and electricity meters classified in 9028 and described above.	Japan, Korea, New Zealand, United States, Canada, European Communities
6. WASTE WATER MANAGEMENT AND POTABLE WATER TREATMENT					
116	Non wovens, whether or not	560314	Landfill drainage mats, Fabric of polyethylene,	Used to ensure efficient leachate or gas landfill drainage.	Chinese Taipei, European

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
	impregnated, coated, covered or laminated: Of man-made filaments: Weighing more than 150 g/m ² .		polypropylene, or nylon for filtering wastewater, Filter cloth (PE, PP, Nylon) Filter bag (sleeve).		Communities, United States
146	Ceramic sinks, wash basins, wash basin pedestals, baths, bidets, water closet pans, flushing cisterns, urinals and similar sanitary fixtures: Of porcelain or china.	691010	Waterless urinal, composting toilet.	Waterless urinals and composting toilets minimise water use. Composting toilets also provide self contained sewage treatment on site, with no need for sewers and treatment plants. These items also do not pollute ground or surface water or soil (unlike septic tanks or pit latrines) and produce safe, useful compost.	New Zealand
165	Tubes, pipes and hollow profiles, of cast iron:	730300	Cast iron pipes, gutters and manholes for waste and potable water applications.	These items facilitate the delivery of safe drinking water and sanitation.	European Communities
167	Tubes, pipes and hollow profiles, seamless, of iron (other than cast iron) or steel: Other than Line pipe of a kind used for oil or gas pipelines.	730431 to 730490	Iron or steel pipes, gutters and manholes for waste and potable water applications.	These items facilitate the delivery of safe drinking water and sanitation.	European Communities
170	Other tubes, pipes and hollow profiles (for example, open seam or welded, riveted or similarly closed), of iron or steel: Other:	730630 to 730690	Iron or steel pipes gutters and manholes for waste and potable water applications.	These items facilitate the delivery of safe drinking water and sanitation	European Communities
174	Reservoirs, tanks, vats and similar containers for any material (other than compressed or liquefied gas), of iron or steel, of a capacity exceeding 300 l, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment; Tanks etc, over 300 litres capacity, iron or steel; Reservoirs, tanks, vats and	730900	<i>Optional ex-outs may include: Tanks or vats for anaerobic digesters for biomass gasification; Solar pre-heating storage tank;; Waste containers including those for municipal or hazardous waste; Cisterns, vats and reservoirs for safe storage of drinking water; Septic tanks, vats and reservoirs for wastewater treatment.</i>	Containers of any material, of any form, for liquid or solid waste, including for municipal or dangerous waste. The containers can be of assistance in the conversion of waste to gas, which can be used to generate energy.	Canada, European Communities, Korea, United States

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	similar containers, capacity >300L, iron or steel (ex liq/compr gas type); Reservoirs, tanks, vats and similar containers, of iron or steel, > 300 litres				
175	Tanks, casks, drums, cans, boxes and similar containers, for any material (other than compressed or liquefied gas), of iron or steel, of a capacity not exceeding 300 l, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment: Of a capacity of 50 l or more: Composting systems of organic matter.	731010	Waste containers including those for municipal or hazardous waste. Waste silos.	For handling and storage of wastewater/sewage during treatment. Containers of any material, of any form, for liquid or solid waste, including for municipal or dangerous waste.	Canada, European Communities, Korea, New Zealand
177	Tanks, casks, drums, cans, boxes and similar containers, for any material (other than compressed or liquefied gas), of iron or steel, of a capacity not exceeding 300 l, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment: Of a capacity of less than 50 l: Other (excluding containers fitted with mechanical or thermal equipment, and cans); Other cans which are to be closed by soldering or crimping, capacity less 50L	731029	Waste containers, whether or not combined with a compactor.	Containers of any material, of any form, for liquid or solid waste, including for municipal or dangerous waste.	Canada, European Communities, Korea
185	Sanitary ware and parts thereof, of iron or steel: Exclusive of 732410 - 732429.	732490	Water saving shower. Water closet pans and flushing cisterns/urinals including dry closets.	Water conserving showers (provided with a specific water-efficiency shower head) and dry closets (operating on the basis of composting) are designed to conserve water.	European Communities
186	Other cast articles of iron or	732510	Sewage, water etc systems.	These items facilitate the delivery of safe drinking water and	Japan, Canada, Korea,

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
	steel; of non-malleable cast iron			sanitation	European Communities
188	Other articles of iron or steel: Other.	732690	Perforated buckets and similar articles of sheet used to filter water at the entrance to drains.	These items facilitate the delivery of safe drinking water and sanitation, which are key MDG priorities	European Communities
229	Hand pumps, other than those of subheading 8413.11 or 8413.19	841320		For handling and transport of wastewater or slurries during treatment.	Canada, Japan, Korea, New Zealand
230	Other reciprocating positive displacement pumps	841350	<i>Optional ex-out may include: Pumps for sewage and wastewater treatment.</i>	For handling and transport of wastewater or slurries during treatment.	Canada, Japan, Korea, New Zealand, United States
231	Other rotary positive displacement pumps	841360	Submersible mixer pump; screw type; flow volume not less than 3m ³ /3min.	For handling and transport of wastewater or slurries during treatment.	Japan, New Zealand, United States, Chinese Taipei, Canada, Korea
232	Other centrifugal pumps	841370	Centrifugal pumps (RFPP, PVDF, Ti, Viton, Seal) lined to prevent corrosion; motor output power not less than 0.4kw.	For handling and transport of wastewater or slurries during treatment.	Canada, Chinese Taipei, Japan, Korea, New Zealand, United States
233	Pumps for liquids, whether or not fitted with a measuring device; other pumps	841381	<i>Optional ex-outs may include: pumps integrated with wind turbines; solar pumping system.</i>	Water handling equipment. Pumps are integral components of water treatment plants.	Canada, European Communities, Japan, Korea, New Zealand, United States
248	Dryers, other:	841939	Sludge driers.	Device used in waste water management, which requires sludge to be treated	European Communities

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
256.	Filtering or purifying machinery and apparatus for liquids: for filtering or purifying water	842121		Used to filter and purify water for a variety of environmental, industrial and scientific applications, including water treatment plants and wastewater treatment facilities.	Canada, Chinese Taipei, European Communities, Japan, Korea, United States
257	Filtering or purifying machinery and apparatus for liquids: other.	842129		Used to remove contaminants from wastewater, by chemical recovery, oil/water separation, screening or straining.	Canada, European Communities, Korea, Japan, New Zealand, United States
261	Centrifuges, including centrifugal dryers; filtering or purifying machinery and apparatus, for liquids or gases: Parts (other than of centrifuges and centrifugal dryers):Filtering or purifying machinery and apparatus for water and parts thereof	842199	Parts for 842121 and 842129.	Including sludge belt filter presses and belt thickeners.	Canada, Chinese Taipei, European Communities, Japan, Korea, United States
270	Other continuous-action elevators and conveyors, for goods or materials: Other, belt type.	842833	<i>Optional ex-out may include troughed belt (cleat type) conveyor, length above 4m, transfer capacity not less than 20m3/hr.</i>	For transport of waste around the treatment plant.	Japan, Korea, New Zealand, Chinese Taipei, United States
294	Pressure-reducing valves	848110		For handling and transport of wastewater or slurries during treatment .	Japan, New Zealand, Canada
295	Taps, cocks, valves and similar appliances for pipes, boiler shells, tanks, vats or the like, including pressure-reducing valves and thermostatically controlled valves (other than parts).	848110 to 848180	<i>Optional ex-out may include: Taps, cocks and valves for water and wastewater.</i>	These items facilitate the delivery of safe drinking water and sanitation, which are key MDG priorities.	European Communities
296	Check (non-return) valves	848130		For handling and transport of wastewater or slurries during	Canada, Japan, New Zealand

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				treatment.	
297	Safety or relief valves	848140		For handling and transport of wastewater or slurries during treatment.	Canada, Japan, New Zealand
298	Other appliances for pipes, boiler shells, tanks, vats or the like	848180		For handling and transport of wastewater or slurries during treatment for those applied to wastewater facilities.	Japan, New Zealand, Canada
299	Taps, cocks, valves and similar appliances for pipes, boiler shells, tanks, vats or the like, including pressure-reducing valves and thermostatically controlled valves: Parts:.	848190		For effective management, control, handling and transport of water.	Canada
346	Other electrical machines and apparatus having individual functions, not elsewhere specified in chapter 85.	854389	Ozone production system; Ultraviolet water disinfection/treatment systems.	UV light is extremely effective in killing and eliminating bacteria, yeasts, viruses, moulds and other harmful organisms. UV systems can be used in conjunction with sediment and carbon filters to create pure drinking water. Water disinfection Ozone (O3) can be used as an alternative to chlorine for water disinfection.	Chinese Taipei, European Communities, Japan, Korea, New Zealand, United States
347	Parts of the machines and apparatus of 85.43	854390	Parts for 854389x.	Water disinfection.	European Communities

7. ENVIRONMENTALLY PREFERABLE PRODUCTS, BASED ON END USE OR DISPOSAL CHARACTERISTICS

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
104	Jute and other textile bast fibres (excluding flax, true hemp and ramie), raw or processed but not spun; tow and waste of these fibres (including yarn waste and garnetted stock)..	530310		The natural fiber composition differentiates jute from alternative synthetic materials due to its biodegradability and sustainable sources. Jute fibers are used for packaging and woven fabric.	Switzerland
106	Sisal other textile fibres of the genus <i>Agave</i> raw	530410		The natural fibre composition differentiates sisal from alternative synthetic materials due to its biodegradability and sustainable sources. Sisal fibres also used in recycled paper.	United States, Switzerland
107	Sisal and other textile fibres of the genus <i>Agave</i> , processed but not spun; tow and waste of these fibres (including yarn waste and garnetted stock).	530490		The natural fibre composition differentiates sisal from alternative synthetic materials due to its biodegradability and sustainable sources. Sisal fibres also used in recycled paper.	United States, Switzerland
117	Twine, cordage, ropes and cables, whether or not plaited or braided and whether or not impregnated, coated, covered or sheathed with rubber or plastics: Of jute or other textile bast fibres of heading 53.03.	560710		More biodegradable than synthetic fibre alternatives and made from a renewable resource.	New Zealand, United States, Switzerland
118	Twine, cordage, ropes and cables whether or not plaited or braided and whether or not impregnated, coated, covered or sheathed with rubber or plastics: Of sisal or other textile fibres of the genus <i>Agave</i> : Binder or baler twine	560721		More biodegradable than synthetic fibre alternatives and made from a renewable resource.	New Zealand, United States

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126	Sacks and bags, of a kind used for the packing of goods: Of jute or of other textile bast fibres of heading 53.03.	630510		More biodegradable than synthetic fibre alternatives and made from a renewable resource.	New Zealand, United States, Switzerland
8. CLEANER OR MORE RESOURCE EFFICIENT TECHNOLOGIES AND PRODUCTS					
183	Cooking appliances and plate warmers: For gas fuel or for both gas and other fuels.	732111	Solar stoves.	Uses solar thermal energy for cooking, thereby producing no air pollution. The use of solar stoves is replacing heating with firewood or other non-renewable energy sources (e.g. oil, gas) and allows for preservation of firewood (especially important in arid areas) and is suitable for off-grid usage.	Switzerland
184	Stoves, ranges, grates, cookers (including those with subsidiary boilers for central heating), barbecues, braziers, gas-rings, plate warmers and similar non-electric domestic appliances, and parts thereof, of iron or steel: Parts.	732190	As applicable to solar stoves.	Parts are used in the maintenance and repair of solar stoves (see item 183 for the environmental benefits).	Switzerland
316	Other primary cells and primary batteries	850680	Fuel cells.	Fuel cells use hydrogen or hydrogen-containing fuels such as methane to produce an electric current, through an electrochemical process rather than combustion. Fuel cells are clean, quiet, and highly efficient sources of electricity.	Canada, Japan, New Zealand, Switzerland
318	Electro-mechanical domestic appliances, with self-contained electric motor: Other.	850980	Garbage degraders with electrical heating systems; or using bacterial decomposing processes or hot-air drying processes.	These items are used to break down food and other garbage from households and the food industry. Such products help <i>inter alia</i> to reduce land fill volumes.	Japan
9. NATURAL RISK MANAGEMENT					
389	Photogrammetrical surveying	901540		Photogrammetry is an aerial remote sensing technique which	Canada, Japan, New Zealand,

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
	instruments and appliances			forms the baseline of many Geographic Information Systems (GIS) and Land Information Systems (LIS), which are important for monitoring and managing natural risks such as floods, earthquakes.	United States
390	Other surveying, hydrographic, oceanographic, hydrological, meteorological or geophysical instruments and appliances, excluding compasses, not elsewhere specified in 90.15	901580		Includes instrument and appliances necessary for measuring the ozone layer and to monitor, measure and assist planning for natural risks such as earthquakes, cyclones, tsunamis etc.	Canada, European Communities, Japan, New Zealand, United States
391	Parts and accessories of the instruments and appliances of 90.15	901590	Parts for 901530, 901540 and 901580.	Parts used in maintenance and repair of the items 389, 390 and 388 with the attendant environmental benefits.	Canada, Japan, New Zealand, United States, European Communities
10. NATURAL RESOURCES PROTECTION					
121	Made-up fishing nets of man-made textile materials.	560811	Specifically made-up fishing nets that incorporate turtle excluder devices.	Use of Turtle Excluder Devices (TEDs) reduces turtle mortality by 90-100 per cent.	United States
122	Knotted netting of twine, cordage or rope; made up fishing nets and other made up nets, of textile materials; Other than made-up fishing nets of manmade textile materials: Knot net of twine made-up fish net textile materials not elsewhere specified or included.	560890	Made-up fishing nets that incorporate turtle excluder devices.	Use of Turtle Excluder Devices (TEDs) reduces turtle mortality by 90-100 per cent.	United States
440	Fish-hooks, whether or not snelled.	950720	Circle hooks.	These rounded, "circle-shaped" hooks reduce sea turtle mortality 60-90 per cent over conventional "J-shaped" hooks.	United States
11. NOISE AND VIBRATION ABATEMENT					

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
88	Agglomerated cork (with or without a binding substance) and articles of agglomerated cork: Panels, boards, tiles, blocks and similar articles of agglomerated cork	450410	Cork underlay in sheets and rolls.	Assists in the reduction of noise levels in buildings.	European Communities, Switzerland
216	Parts suitable for use solely or principally with the engines of heading No. 84.07 or 84.08: Other: Suitable for use solely or principally with spark-ignition internal combustion piston engines.	840991	Industrial mufflers.	Industrial mufflers are used for reducing engine noise.	Chinese Taipei, European Communities, Korea, Japan, United States
217	Parts suitable for use solely or principally with the engines of heading No. 84.07 or 84.08: Other.	840999	Industrial mufflers.	Industrial mufflers are used for reducing engine noise.	European Communities, Japan, Korea, United States
425	Machines for balancing mechanical parts.	903110		Environmental applications of these machines include balancing of parts and equipment to minimise noise and vibration.	Canada, Japan, New Zealand, United States
12. ENVIRONMENTAL MONITORING, ANALYSIS AND ASSESSMENT EQUIPMENT					
388	Levels: Hydrological, oceanographic, meteorological instruments and appliances. Exclusive of 90.31	901530		Includes levels used for environmental purposes such as measuring the ozone layer, elements of climate change etc.	European Communities

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
400	Instruments and apparatus for measuring or checking the flow or level of liquid	902610		Meters, which check and record the level and/or flow of liquids or gases, are routinely used during complex auditing and testing to ensure the efficient operation of environmental systems such as water and wastewater treatment plants, air pollution control systems, and hydroelectric facilities.	Canada, Japan, Korea, New Zealand, United States
401	Instruments and apparatus for measuring or checking pressure	902620		Manometers (devices that measure pressure) are used in power plants, water delivery systems, and other applications such as monitoring indoor air. There are two principal types: digital manometers and tube manometers, both of which have important environmental applications.	Canada, Japan, Korea, New Zealand, United States
402	Other instruments and apparatus	902680		These instruments include heat meters that are used to monitor and measure the distribution of heat from geothermal or biomass district heating systems.	Japan, Korea, New Zealand, United States, Canada
403	Parts and accessories for articles of subheading 9026	902690		These are parts for the instruments and devices in 9026.10, 9026.20, and 9026.80.	Canada, Japan, Korea, New Zealand, United States
405	Gas or smoke analysis apparatus	902710		Gas analyzers are designed to continuously monitor single or multiple gas components, and such an instrument is used to analyze air emissions from automobiles.	Canada, Chinese Taipei, Japan, United States, New Zealand, European Communities
406	Chromatographs and electrophoresis instruments	902720		Gas and liquid chromatographs use an analytical method where a physical separation of the sample components occurs prior to detection. These instruments can be use to monitor and analyze air pollution emissions, ambient air quality, water quality, etc. Electrophoresis instruments can be used to monitory and analyze materials such as particulates emitted from incinerators or from diesel exhaust.	Japan, Korea, New Zealand, United States, Canada, Chinese Taipei

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
407	Spectrometers, spectrophotometers and spectrographs using optical radiations (UV, visible, IR)	902730		Spectrometers are used in a wide range of environmental applications, including to identify and characterise unknown chemicals and in environmental applications to detect toxins and identify trace contaminants. They are also used for qualitative and quantitative analysis inter alia in quality control departments, environmental control, water management, food processing, agriculture and weather monitoring.	Canada, Chinese Taipei, Japan, New Zealand, United States
408	Exposure meters	902740		Exposure meters are used, <i>inter alia</i> , to control light sources and for measurements in agriculture, horticulture, and other natural resources applications.	Canada, Japan, Korea, New Zealand, United States
409	Other instruments and apparatus using optical radiations (UV, visible, IR)	902750		These instruments can be used for chemical, thermal, or optical analysis of samples, including water quality photometers which are used to determine the concentration of a solution from its color intensity.	Canada, Japan, Korea, New Zealand, United States
410	Instruments and apparatus for physical or chemical analysis not elsewhere specified in 90.27.	902780	<i>Optional ex-out may include: For analysing noise, air, water and hydrocarbons and heavy metals in soil..</i>	These instruments include: magnetic resonance instruments which are used in biologic and geologic analysis; and mass spectrometers which are used to identify elements and compounds.	Canada, Chinese Taipei, European Communities, Japan, Korea, New Zealand, United States
411	Microtomes; parts and accessories of instruments and appliances of 90.27.	902790	<i>Optional ex-outs may include: Parts for 902710 and 902780x.</i>	These instruments include microtomes which are devices that prepare slices of samples for analysis. Also included here are parts of the instruments classified in 9027 and described above.	Canada European Communities, Japan, Korea, New Zealand, United States
418	Instruments and apparatus for	903010		These items are used for the purpose of detecting the presence	Canada, Japan, Korea, New

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
	measuring or detecting ionising radiations.			of ionizing radiation and may, for instance, include Geiger counters that are useful in performing surveys for radioactivity contamination.	Zealand, United States
419	Cathode-ray oscilloscopes and cathode-ray oscillographs.	903020		Oscilloscopes are used to translate an electronic signal into a pattern on a screen. These instruments are used for testing and calibrating laboratory equipment.	Canada, Japan, New Zealand, United States
420	Multimeters.	903031		These products measure electrical flow, including current, resistance, voltage, frequency, temperature and in this way are used to identify electronic and electrical problems in equipment.	Canada, Japan, Korea, New Zealand, United States
421	Other instruments and apparatus, for measuring or checking voltage, current, resistance or power, without a recording device.	903039	<i>Optional ex-outs may include: Volt meters, Am meters, Circuit testers, Resistance meters, Galvano meters</i>	These instruments include single function meters. An ammeter measures current, a voltmeter measures voltage, and an ohmmeter measures resistance. These instruments are also used to find problems in equipment.	Canada, Japan, Korea, New Zealand, United States
422	Other instruments and apparatus for measuring or checking electrical quantities, with a recording device.	903083		These instruments are similar to those above, but include componentry that is a recording device - these add a further technical element to the process of identifying electrical problems in equipment.	Canada, Japan, Korea, New Zealand, United States

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
423	Other instruments and apparatus for measuring or checking electrical quantities.	903089		These instruments are similar to those above, and are used to identify electrical faults.	Canada, Japan, New Zealand, United States
424	Parts and accessories of Heading 90.30.	903090	<i>Optional ex-out may include: Parts and accessories for nominated articles of subheading 903010.</i>	See above goods of subheading 9030.	Canada, European Communities, Japan, Korea, New Zealand, United States
426	Test benches.	903120		Test benches are used to test designs and equipment, such as components or subsystems of a solar power plant.	Canada, Japan, New Zealand, United States
427	Profile projectors.	903130		Profile projectors are used for critical tasks in engineering such as measuring and inspecting high precision, complex parts in many applications and industries.	Canada, Japan, Korea, New Zealand, United States
428	Other measuring and checking instruments, appliances and machines, not specified or included elsewhere in this chapter: ..Other optical instruments, appliances and machines elsewhere specified for measuring or checking.	903149		Equipment used in the measurement, recording, analysis and assessment of environmental samples or environmental impact.	Canada, Korea, Japan, New Zealand

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
429	Other instruments, appliances and machines.	903180	<i>Optional ex-out may include: Vibrometers, hand vibration meters</i>	These products include <i>inter alia</i> , items such as vibrometers (that measure vibrations and assess structural and other effects of such vibrations) and electron microscopes for laboratory and testing applications.	European Communities, Japan, New Zealand, United States, Canada
430	Parts and accessories of the instruments and appliances and machines of 90.31.	903190	<i>Optional ex-out may include: Parts for 903180x.</i>	These are parts for the equipment classified in 9031 and described above.	European Communities, Canada, Korea, New Zealand, United States, Japan
432	Thermostats.	903210		Products include thermostats that control the efficiency of air conditioning, refrigeration or heating systems.	Canada, Japan, New Zealand, United States
433	Manostats.	903220		Manostats measure and monitor pressure and are used for controlling pumps and chemical feed equipment in applications such as wastewater treatment.	Canada, Japan, Korea, New Zealand, United States
434	Hydraulic and pneumatic instruments and apparatus.	903281		These include control-related instruments and apparatus which have many environmental applications such as water treatment, wastewater treatment, air pollution control as well as efficient process controls for many industrial applications.	Canada, Japan, Korea, New Zealand, United States
436	-Parts and accessories for nominated articles of subheading 9032.	903290		These are the parts for the automatic regulating and control instruments classified in 9032 and described.	Canada, Japan, New Zealand, United States, Korea
437	Parts and accessories (not	903300		These are the parts and accessories for the products described	Canada, European

ENTRY	HS CODE DESCRIPTION	HS (2002)	EX-OUT / ADDITIONAL PRODUCT SPECIFICATION	REMARKS / ENVIRONMENTAL BENEFIT	MEMBER
	specified or included elsewhere in this Chapter) for machines, appliances, instruments or apparatus of Chapter 90.			above.	Communities, Japan, Korea, New Zealand, United States

Table 2: Proposed Coverage of Environmental Goods for EVSL (APEC)

	Env. Activity	HTS No.		HS 6-Digit Description	Additional Product Specification
1	R/C	2302.10	ex	Bran, sharps and other residues, whether or not in the form of pellets, derived from the sifting, milling or other working of corn	Booms or socks consisting of ground corn cobs contained in a textile covering
2	WWM	3926.90	ex	Other articles of plastics and articles of other materials of headings 3901 to 3914; other	Bio-film medium that consists of woven fabric sheets that facilitate the growth of bio-organisms.
3	WWM	3926.90	ex	Other articles of plastics and articles of other materials of headings 3901 to 3914; other	Rotating biological contactor consisting of stacks of large (HDPE) plates that facilitate the growth of bio-organisms.
4	WWM	4601.20	ex	Mats, matting, and screens of vegetable materials	Erosion control matting (biodegradable)
5	WWM	4601.20	ex	Mats, matting, and screens of vegetable materials	Ecologically safe ground covers (biodegradable)
6	WWM	5603.14	ex	Non-wovens, whether or not impregnated, coated, covered or laminated: of manmade filaments; weighing more than 150 g/m2	Fabric of polyethylene/polypropylene/nylon for filtering wastewater.
7	WWM	5911.90	ex	Textile products and articles, for technical uses, specified in note 7 to this chapter; other	Environmental protection cloth
8	M/A	6902.10	ex	Refractory bricks, blocks, tiles and similar refractory ceramic constructional goods, other than those of siliceous fossil meals or similar siliceous earths; containing by weight, singly or together, more than 50% of the elements Mg, Ca or Cr, expressed as MgO, CaO or Cr ₂ O ₃	Industrial incineration
9	M/A	6902.20	ex	Refractory bricks, blocks, tiles and similar refractory ceramic constructional goods, other than those of siliceous fossil meals or similar siliceous earths; containing by weight more than 50% of alumina (Al ₂ O ₃), of silica (SiO ₂) or of a mixture or compound of these products	Industrial incineration
10	M/A	6902.90	ex	Refractory bricks, blocks, tiles and similar refractory ceramic constructional goods, other than those of siliceous fossil meals or similar siliceous earths; other	Industrial incineration

	Env. Activity	HTS No.		HS 6-Digit Description	Additional Product Specification
11	M/A	6903.10	ex	Other refractory ceramic goods (for example, retorts, crucibles, muffles, nozzles, plugs, supports, cupels, tubes, pipes, sheaths and rods), other than those of siliceous fossil meal or of similar siliceous earths; containing by weight more than 50% of graphite or other carbon or of a mixture of these products	Laboratory refractory equipment
12	M/A	6903.20	ex	Other refractory ceramic goods (for example, retorts, crucibles, muffles, nozzles, plugs, supports, cupels, tubes, pipes, sheaths and rods), other than those of siliceous fossil meal or of similar siliceous earths; containing any weight more than 50% of alumina (Al ₂ O ₃) or of a mixture or compound of alumina and silica (SiO ₂)	Laboratory refractory equipment
13	M/A	6903.90	ex	Other refractory ceramic goods (for example, retorts, crucibles, muffles, nozzles, plugs, supports, cupels, tubes, pipes, sheaths and rods), other than those of siliceous fossil meal or of similar siliceous earths; other	Laboratory refractory equipment
14	M/A	6909.19	ex	Ceramic wares for laboratory, chemical or other technical uses; other	Laboratory equipment
15	M/A	7017.10		Laboratory, hygienic or pharmaceutical glassware, whether or not graduated or calibrated; of fused quartz or other fused silica	
16	M/A	7017.20		Laboratory, hygienic or pharmaceutical glassware, whether or not graduated or calibrated; of other glass having a linear coefficient of expansion not exceeding 5×10^{-6} per Kelvin within a temperature range of 0 C - 300 C	
17	M/A	7017.90		Laboratory, hygienic or pharmaceutical glassware, whether or not graduated or calibrated; other	

	Env. Activity	HTS No.		HS 6-Digit Description	Additional Product Specification
18	APC	8404.10		Auxiliary plant for use with boilers of heading No. 8402 or 8403 (for example, economizers, super-heaters, soot removers, gas recoverers)	
19	APC	8404.20		Condensers for steam or other vapour power units	
20	APC	8405.10	ex	Producer gas or water gas generators, with or without their purifier; acetylene gas generators and similar water process gas generator, with or without their purifiers	Include only those with purifiers.
21	N/V	8409.91	ex	Parts suitable for use solely or principally with the engines of heading No. 8407 or 8408; suitable for use solely or principally with spark-ignition internal combustion piston engines.	Industrial mufflers
22	APC	8409.99	ex	Parts suitable for use solely or principally with the engines of heading No. 8407 or 8408; other	Industrial mufflers
23	REP	8410.11		Hydraulic turbines and water wheels of a power not exceeding 1,000 kW	
24	REP	8410.12		Hydraulic turbines and water wheels of a power exceeding 1,000 kW but not exceeding 10,000 kW	
25	REP	8410.13		Hydraulic turbines and water wheels of a power exceeding 10,000 kW	
26	REP	8410.90		Hydraulic turbines and water wheels; parts, including regulators	
27	WWM	8413.60	ex	Pumps for liquids, whether or not fitted with a measuring device; other rotary positive displacement pumps	Submersible mixer pump to circulate water in wastewater treatment process; sewage pumps, screw type
28	WWM	8413.70	ex	Pumps for liquids, whether or not fitted with a measuring device; other centrifugal pumps	Centrifugal pumps lined to prevent corrosion; centrifugal sewage pumps

	Env. Activity	HTS No.		HS 6-Digit Description	Additional Product Specification
29	PWT	8413.81	ex	Pumps for liquids, whether or not fitted with a measuring device; other pumps	Wind turbine pump
30	M/A	8414.10		Vacuum pumps	
31	APC	8414.59		Fans (and blowers) other than table, floor, window, ceiling or roof fans with a self contained electric motor of an output not exceeding 125W	
32	M/A	8414.80		Air or vacuum pumps, air or other gas compressors and fans; ventilating or recycling hoods incorporating a fan, whether or not fitted with filters; other	
33	S/H	8417.80	ex	Industrial or laboratory furnaces and ovens, including incinerators, non-electric; other than bakery ovens and furnaces for treatment of ores	Waste Incinerators
34	S/H	8417.90	ex	Parts of Industrial or Laboratory Furnaces and Ovens, Including Incinerators, Non-electric	Parts of waste incinerators
35	REP	8419.19	ex	Other instantaneous or storage water heaters, non-electric	Solar Water Heaters
36	M/A	8419.40		Distilling or rectifying plant	
37	H/E	8419.50		Heat exchange units	
38	M/A	8419.60		Machinery for liquefying air or other gases	
39	M/A	8421.19		Centrifuges, including centrifugal dryers, other than cream separators and clothes-dryers	
40	WWM	8421.21		Filtering or purifying machinery and apparatus for liquids: for filtering or purifying water	
41	WWM	8421.29		Filtering or Purifying Machinery and Apparatus For Liquids; other	
42	APC	8421.39		Filtering or Purifying Machinery and Apparatus For Gases; other	
43	M/A	8421.91	ex	Parts of Centrifuges, Including Centrifugal Dryers	Centrifuges, Accessories & Parts; except clothes dryers and clothes dryer furniture

	Env. Activity	HTS No.		HS 6-Digit Description	Additional Product Specification
44	APC	8421.99		Parts of filtering or purifying machinery and apparatus for liquids or gases	
45	ORS	8422.20		Machinery for cleaning or drying bottles or other containers	
46	WWM	8428.33	ex	Other continuous-action elevators and conveyors, for goods or materials; other, belt type	Belt-type above ground conveyor used to transfer solids or slurries between plants
47	WWM	8436.80	ex	Other agricultural, horticultural, forestry, poultry-keeping or bee-keeping machinery	Hot water weed killing system
48	S/H	8462.91	ex	Machine tools for working metal, other than punching or notching and combined punching and shearing; hydraulic presses	Shredders/balers for metals; hydraulic
49	S/H	8472.90	ex	Other office machines	Paper shredders
50	S/H	8474.10	ex	Sorting, screening, separating or washing machines	Machines of a kind for use in screening and washing coal
51	ORS	8474.10	ex	Sorting, screening, separating or washing machines	Waste foundry sand reclamation equipment
52	ORS	8474.32	ex	Machines for mixing mineral substances with bitumen	Asphalt recycle equipment
53	WWM	8479.82	ex	Mixing, kneading, crushing, grinding, screening, sifting, homogenizing emulsifying or stirring machines	Agitator for wastewater treatment
54	ORS	8479.82	ex	Mixing, kneading, crushing, grinding, screening, sifting, homogenizing emulsifying or stirring machines	Other than kneading machinery
55	S/H	8479.89	ex	Machines and mechanical appliances having individual functions, not elsewhere specified or included in this chapter, other	Radioactive waste press
56	WWM	8479.89	ex	Machines and mechanical appliances having individual functions, not elsewhere specified or included in this chapter, other	Trash compactors
57	PWT	8479.90	ex	Parts of Machines and mechanical appliances having individual functions, not elsewhere specified or included in this chapter, other	Parts of trash compactors

	Env. Activity	HTS No.		HS 6-Digit Description	Additional Product Specification
58	REP	8502.31		Generating sets, electric, wind-powered	
59	S/H	8505.90	ex	Electro-magnets; other, including parts	Electromagnet
60	S/H	8514.10	ex	Industrial or Laboratory Furnaces and Ovens; electric, resistance heated	Waste incinerators or other waste treatment apparatus
61	S/H	8514.20	ex	Industrial or Laboratory Furnaces and Ovens; electric, induction or dielectric	Waste incinerators or other waste treatment apparatus
62	S/H	8514.30	ex	Industrial or Laboratory Furnaces and Ovens, electric, other	Waste incinerators or other waste treatment apparatus
63	S/H	8514.90	ex	Parts of industrial or laboratory electric furnaces and ovens or other laboratory induction or dielectric heating equipment	Parts of Waste incinerators
64	REP	8541.40	ex	Photosensitive semiconductor devices, including photovoltaic cells whether or not assembled in modules or made up into panels; light emitting diodes	Solar cells
65	WWM	8543.89	ex	Electrical machines and apparatus, having individual functions, not specified or included elsewhere in this chapter; other	Ozone production system
66	R/C	8907.10	ex	Inflatable rafts	Inflatable oil spill recovery barges
67	R/C	8907.90	ex	Other floating structures	Pollution protection booms
68	M/A	9015.40		Photogrammetrical surveying instruments and appliances	
69	M/A	9015.80		Other surveying, hydrographic, oceanographic, hydrological, meteorological or geophysical instruments and appliances, excluding	
70	M/A	9015.90	ex	Parts and accessories of surveying, hydrological, meteorological, or geophysical instruments and appliances, excluding compasses	Photogrammetric instruments; parts and accessories for articles of subheading 9015.40
71	M/A	9022.29		Apparatus based on the use of X-rays or of alpha, beta or gamma radiations for other than medical, surgical, dental or veterinary uses	
72	M/A	9022.90	ex	Apparatus based on the use of X-rays or of alpha, beta or gamma radiations for other than medical, surgical, dental or veterinary uses	Parts and accessories for goods of subheading 9022.29

	Env. Activity	HTS No.		HS 6-Digit Description	Additional Product Specification
73	M/A	9025.11		Thermometers and pyrometers, not combined with other instruments: liquid-filled, for direct reading	
74	M/A	9025.19		Thermometers and pyrometers, not combined with other instruments: other than liquid-filled, for direct reading	
75	M/A	9025.80		Hydrometers and similar floating instruments, thermometers pyrometers, barometers, hygrometers, and psychrometers, recording or not, and any combination of these instruments	
76	M/A	9025.90		Parts and Accessories for Hydrometers and similar floating instruments, thermometers pyrometers, barometers, hygrometers, and psychrometers, recording or not, and any combination of these instruments	
77	M/A	9026.10		Instruments and apparatus for measuring or checking the flow or level of liquid	
78	M/A	9026.20		Instruments and apparatus for measuring or checking pressure	
79	M/A	9026.80		Other instruments and apparatus	
80	M/A	9026.90		Parts and accessories for articles of subheading 9026	
81	M/A	9027.10		Gas or smoke analysis apparatus	
82	M/A	9027.20		Chromatographs and electrophoresis instruments	
83	M/A	9027.30		Spectrometers, Spectrophotometers and Spectrographs Using Optical Radiations (Ultraviolet, Visible, Infrared)	
84	M/A	9027.40		Exposure Meters	
85	M/A	9027.50		Other instruments and apparatus using optical radiations (UV, visible, IR)	

	Env. Activity	HTS No.		HS 6-Digit Description	Additional Product Specification
86	M/A	9027.80		Other instruments and apparatus for physical or chemical analysis	
87	M/A	9027.90		Microtomes; parts and accessories	
88	M/A	9028.10		Gas Meters	
89	M/A	9028.20		Liquid Meters	
90	M/A	9028.30		Electricity Meters	
91	M/A	9028.90		Parts and accessories for articles of subheading 9028	
92	M/A	9030.10		Instruments and apparatus for measuring or detecting ionising radiations	
93	M/A	9030.20		Cathode-ray Oscilloscopes and Cathode-ray Oscillographs	
94	M/A	9030.31		Multimeters	
95	M/A	9030.39		Other instruments and apparatus, for measuring or checking voltage, current, resistance or power, without a recording device	
96	M/A	9030.83		Other instruments and apparatus for measuring or checking electrical quantities, with a recording device	
97	M/A	9030.89		Other Instruments and Apparatus for Measuring or Checking Electrical Quantities	
98	M/A	9030.90	ex	Parts and accessories (for nominated articles of subheading 9030)	
99	M/A	9031.10		Machines for Balancing Mechanical Parts	
100	M/A	9031.20		Test Benches	

	Env. Activity	HTS No.		HS 6-Digit Description	Additional Product Specification
101	M/A	9031.30		Profile Projectors	
102	M/A	9031.80		Other Measuring or Checking Instruments, Appliances and Machines, not elsewhere specified in this chapter	
103	M/A	9031.90	ex	Parts and accessories (for nominated articles of subheading 9031)	
104	M/A	9032.10		Thermostats	
105	M/A	9032.20		Manostats	
106	M/A	9032.81		Hydraulic and Pneumatic Instruments and Apparatus	
107	M/A	9032.89		Automatic Regulating or Controlling Instruments, other	
108	M/A	9032.90		Parts and accessories	
109	M/A	9033.00		Parts and Accessories (Not Specified or Included Elsewhere in this Chapter) for Machines, Appliances, Instruments or Apparatus of Ch. 90	

APC = Air Pollution Control ORS = Other Recycling Systems S/H = Solid/Hazardous Waste H/E = Heat/Energy Management

PWT = Potable Water Treatment WWM = Waste Water Management M/A= Monitoring/Analysis

R/C = Remediation/cleanup

N/V = Noise/vibration abatement

REP= Renewable Energy Plant

**Table 3:
OECD's Illustrative Categories of Environmental Goods**

Description	HS Code
A. POLLUTION MANAGEMENT	
1. Air pollution control	
<i>1.1 Air-handling equipment</i>	
Vacuum pumps	841410
Compressors of a kind used in refrigerating equipment	841430
Air compressors mounted on a wheeled chassis for towing	841440
Other air or gas compressors or hoods	841480
Parts for air or gas compressors, fans or hoods	841490
<i>1.2 Catalytic converters</i>	
Filtering or purifying machinery and apparatus for gases	842139
Parts for filtering or purifying machinery	842199
<i>1.3 Chemical recovery systems</i>	
Limestone flux	
Slaked (hydrated) lime	252100
Magnesium hydroxide and peroxide	252220
Activated earths	281610
Filtering or purifying machinery and apparatus for gases* Parts for filtering or purifying machinery*	842139 842199
<i>1.4 Dust collectors</i>	
Filtering or purifying machinery and apparatus for gases* Parts for filtering or purifying machinery*	842139 842199
<i>1.5 Separators/precipitators</i>	
Other glass fibre products	
Machinery for liquefying air or other gases	701990
Other machinery for treatment of materials by change of temperature	841960
Filtering or purifying machinery and apparatus for gases*	841989
Parts for filtering or purifying machinery*	842139 842199
<i>1.6 Incinerators, scrubbers</i>	
Other furnaces, ovens, incinerators, non-electric	
Filtering or purifying machinery and apparatus for gases*	841780
Parts for filtering or purifying machinery* Industrial or laboratory electric resistance furnaces Industrial or laboratory induction or dielectric furnaces Other industrial or laboratory electric furnaces and ovens Parts, industrial or laboratory electric furnaces	842139 842199 851410 851420 851430 851490
<i>1.7 Odour control equipment</i>	
Parts for sprayers for powders or liquids	851490
	842490

Description	HS Code
2. Wastewater management	
2.1 <i>Aeration systems</i>	
Compressors of a kind used in refrigerating equipment*	841430
Air compressors mounted on a wheeled chassis for towing*	841440
Other air or gas compressors or hoods*	841480
Parts for air or gas compressors, fans or hoods*	841490
2.2 <i>Chemical recovery systems</i>	
Limestone flux*	252100
Slaked (hydrated) lime* Chlorine	252220
Anhydrous ammonia	280110
Sodium hydroxide solid.	281410
Sodium hydroxide in aqueous solution Magnesium	281511
hydroxide and peroxide* Activated earths*	281512
Aluminium hydroxide	281610
Manganese dioxide	281830
Manganese oxides (other) Lead monoxide	282010
Sodium sulphites	282090
Other sulphites	282410
Phosphinates and phosphonates	283210
Phosphates of triammonium	283220
Phosphates of monosodium or disodium	283510
Phosphates of trisodium	283521
Phosphates of potassium	283822
Calcium hydrogenorthophosphate	283523
Other phosphates of calcium	283524
Other phosphates (excl. polyphosphates) Activated carbon	283525
Water filtering or purifying machinery and apparatus	283526
Other machinery for purifying liquids	283529
Parts for filtering or purifying machinery*	380210
	842121
2.3 <i>Biological recovery systems</i>	842129
	842199
2.4 <i>Gravity sedimentation systems</i>	
Flocculating agents	
2.5 <i>Oil/water separation systems</i>	
Other centrifuges	
Parts of centrifuges	
Water filtering or purifying machinery and apparatus* Other machinery for purifying liquids*	842119
Parts for filtering or purifying machinery*	842191
	842121
2.6 <i>Screens/strainers</i>	842129
Other articles of plastic	842199
Water filtering or purifying machinery and apparatus* Other machinery for purifying liquids*	392690
	842121 .
	842129

Description	HS Code
Parts for filtering or purifying machinery*	842199
<i>2.7 Sewage treatment</i>	
Flocculating agents	580190
Woven pile & chenille fabrics of other textile materials	730900
Tanks, vats, etc. > 300l	731010
Tanks, drums, etc. >50 l < 300 l	731021
Cans < 50 l, closed by soldering or crimping	731029
Other cans < 50l	841000
Hydraulic turbines	841011
	841012
	841013
Parts for hydraulic turbines	841090
Incinerators, non-elec*	841780
Weighing machines capacity <30 kg	842381
Weighing machines capacity >30 kg <500 kg	842382
Weighing machines	842389
Parts for sprayers for powders or liquids* Industrial/lab electric	842490
resistance furnaces* Industrial/lab induction, dielectric furnaces*	851410
Industrial/lab electric furnaces & ovens, nes* Parts, incl & lab elec	851420
furnaces*	851430
	851490
<i>2.8 Water pollution control, wastewater reuse equipment</i>	
<i>2.9 Water handling goods and equipment</i>	
Articles of cast iron	
Root control equipment	
Positive displacement pumps, hand operated	732510
Other reciprocating positive displacement pumps	
Other rotary positive displacement pumps	841320
Other centrifugal pumps	841350
Other pumps	841360
Valves, pressure reducing	841370
Valves, check	841381
Valves, safety	848110
Other taps, cocks, valves, etc.	848130
Instruments for measuring the flow or level of liquids	848140
Instruments for measuring or checking pressure	848180
	902610
3. Solid waste management	902620
<i>3.1 Hazardous waste storage and treatment equipment</i>	
Other articles of cement, concrete	
Other articles of lead	
Other electric space heating and soil heating apparatus	
Lasers	681099
Vitrification equipment*	780600
	851629
	901320

Description	HS Code
<p><i>3.2 Waste collection equipment</i> Household & toilet articles of plastic</p>	392490
<p>Brooms, hand Brushes as parts of machines, appliances Mechanical floor sweepers Trash bin liners (plastic)</p>	960310 960350 980390
<p><i>3.3 Waste disposal equipment</i> Compactors Refuse disposal vehicles Polypropylene sheeting, etc.</p>	392020
<p><i>3.4 Waste handling equipment</i></p>	
<p><i>3.5 Waste separation equipment</i> Magnetic separators</p>	
<p><i>3.6 Recycling equipment</i> Magnetic separators* Machinery to clean, dry bottles, etc. Other mixing or kneading machines for earth, stone, sand, etc. Other machines for mixing/grinding, etc. Other machines, nes, having individual functions Tire-shredding machinery</p>	842220 847439 847982 847989
<p><i>3.7 Incineration equipment</i> Other furnaces, ovens, incinerators, non-electric* Parts of furnaces, non-electric Industrial or laboratory electric resistance furnaces* Industrial or laboratory induction or dielectric furnaces* Other industrial or laboratory electric furnaces and ovens* Parts, industrial or laboratory electric furnaces*</p>	841780 841790 851410 851420 851430
<p>4. Remediation and cleanup</p>	851490
<p><i>4.1 Absorbents</i></p>	
<p><i>4.2 Cleanup</i> Other electric space heating and soil heating apparatus* Lasers* Vitrification equipment*</p>	
<p><i>4.3 Water treatment equipment</i> Surface active chemicals (not finished detergents) Oil spillage cleanup equipment Other electrical machines and apparatus with one function</p>	851629 901320
<p>5. Noise and vibration abatement</p>	
<p><i>5.1 Mufflers/silencers</i></p>	854389

Description	HS Code
Parts for spark-ignition internal combustion piston engines	840991
Parts for diesel or semi-diesel engines	840999
Silencers and exhaust pipes, motor vehicles	870892
<i>5.2 Noise deadening material</i>	
<i>5.3 Vibration control systems</i>	
<i>5.4 Highway barriers</i>	
6. Environmental monitoring, analysis and assessment	
<i>6.1 Measuring and monitoring equipment</i> Thermometers, pyrometers, liquid-filled Other thermometers, pyrometers Hydrometers, barometers, hygrometers, etc.	902511
Other instruments for measuring liquids or gases	902519
Parts of instruments for measuring, checking liquids or gases	902580
Instruments for analysing gas or smoke	902680
Chromatographs, etc. Spectrometers, etc. Exposure meters	902690
Other instruments using optical radiation	902710
Other instruments for physical or chemical analysis	902720
Parts for instruments, incl. microtomes	902730
Ionising radiation measuring & detecting instruments	902740
Other optical instruments	902750
Other measuring or checking instruments	902780
Manostats	902790
Hydraulic/pneumatic automatic regulate, control instruments	903010
Other automatic regulate, control instruments	903149
Auto emissions testers	903180
Noise measuring equipment	903220
<i>6.2 Sampling systems</i>	903281
<i>6.3 Process and control equipment</i>	903289
Thermostats	
Electrical process control equipment	
On-board monitoring/control	
<i>6.4 Data acquisition equipment</i>	903210
<i>6.5 Other instruments/machines</i>	
B. CLEANER TECHNOLOGIES AND PRODUCTS	
1. Cleaner/resource efficient technologies and processes	
Electrochemical apparatus / plant	
Extended cooking (pulp) Oxygen delignification	

Description	HS Code
Ultrasonic cleaning Fluidised bed combustion	
<p>2. Cleaner/resource efficient products</p> <p>CFC substitutes Hydrogen peroxide Peat replacements (e.g. bark) Water-based adhesives Paints and varnishes, in aqueous medium, acrylic or vinyl Other paints and varnishes, in aqueous medium Double-hulled oil tankers Low-noise compressors</p> <p>C. RESOURCES MANAGEMENT GROUP</p> <p>1. Indoor air pollution control</p> <p>2. Water supply</p> <p><i>2.1 Potable water treatment</i></p> <p><i>2.2 Water purification systems</i> Chlorine*</p> <p><i>2.3 Potable water supply and distribution</i> Water, incl. natural or artificial mineral water Distilled and conductivity water Ion exchangers (polymer)</p> <p>3. Recycled materials</p> <p><i>3.1 Recycled paper</i></p> <p><i>3.2 Other recycled products</i></p> <p>4. Renewable energy plant</p> <p><i>4.1 Solar</i> Instantaneous gas water heaters Other instantaneous or storage water heaters, non-electric Photosensitive semiconductor devices, incl. solar cells</p> <p><i>4.2 Wind</i> Windmills Wind turbines</p> <p><i>4.3 Tidal</i></p> <p><i>4.4 Geothermal</i></p>	<p>280110</p> <p>320910</p> <p>320990</p> <p>280110</p> <p>220100</p> <p>285100</p> <p>391400</p> <p>841911</p> <p>841919</p> <p>854140</p>

Description	HS Code
4.5 Other Methanol Ethanol	290511 220710
Hydroelectric plant 5. Heat/energy savings and management Catalysts Multiple walled insulating units of glass Other glass fibre products* Heat exchange units Parts for heat exchange equipment Heat pumps District heating plant Waste heat boilers Burners: fuel other than oil or gas Fluorescent lamps, hot cathode Electric cars Fuel cells Gas supply, production and calibrating metres Liquid supply, production and calibrating metres Thermostats* 6. Sustainable agriculture and fisheries 7. Sustainable forestry 8. Natural risk management Satellite imaging Seismic instruments 9. Eco-tourism 10. Other	 381500 700800 701990 841950 841990 853931 902810 902820 903210

* Indicates that the HS code appears previously in the table.