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THE PARIS AGREEMENT AND ITS RELATIONSHIP WITH THE WORLD TRADE ORGANIZATION

RELATORE

Prof. Virzo Roberto

CANDIDATO

Matr. 081042

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1. Introduction

The Paris Agreement has been depicted as a turning point in International Environmental Law which marks the beginning of a new period in the field of International Environmental Law. In fact, by analysing the characteristics of this Agreements, it is possible to recognize that they have never been integrated into any earlier Multilateral Environmental Agreement. Moreover, the architecture upon which the whole Agreement is structured represents a novelty in the field of international law. This unprecedented Agreement is the result of a change in relations between super-powers and between developed and developing countries. Additionally, it reflects a change in how climate change is perceived and a change in the ways to solve or adapt to it. Furthermore, the Paris Agreement mirrors the change brought about by the global economy and the relative right to grow put forward by emerging developing economies.

Climate change is likely to be one of the most important problems of the XXI century and the Paris Agreement is the latest instrument which the international community has developed in order to deal with it. During the first chapter I will analyse the features that make this Agreement unprecedented in the history of international environmental law. Moreover, I will also explain the differences with earlier Multilateral Environmental Agreements and I will discuss the points of contact and continuity that this international treaty has with its precedents. In order to do so, I will thoroughly analyse the provisions contained in the Paris Agreement and other relevant articles contained in earlier Multilateral Environmental Agreements. Furthermore, I will draw on the pertinent literature that has been written around the Paris Agreement.

Climate change, however, is a multidisciplinary problem that relates to many other fields of international law. Here I will focus on its relationship with the World Trade Organization. In fact, in recent years there have been many conflicts between international environmental law and international trade law. It is likely that, as a consequence of the Paris Agreements, the frictions between the two branches may become more. It is fundamental to understand how international environmental law and international trade law interrelate with one another. It is possible that the latter may influence or prevent the outcome of the former. Additionally, countries have put more emphasis in establishing trade rules than obligations toward the environment. In the second chapter, I will discuss the feasibility of some measures and policies proposed or accepted by the Paris Agreement. I will specifically analyse the possible conflicts that may arise between the two confronting fields of international environmental law and obligations of the World Trade Organization.

Finally, I will take into account for my discussion, the treaties provided by the Word Trade Organization and Multilateral Environmental Treaties, with a special focus on the Paris Agreement. Furthermore, I will consult the relevant literature on the argument of environmental rules and trade obligations.

2. The Paris Agreement

The Paris Agreement on the mitigation of climate change has been a remarkable point in the history of international environmental law[1]. The non-legally binding character of the treaty and its mild commitments have divided scholars upon the efficacy it will have in combating climate change. However, the Paris Agreement was the result of a long negotiation process that started in 2005. In fact, the Parties to the Kyoto Protocol began questioning what would happen after the end of its first commitment period in 2012[2]. Two alternative options were being discussed. The first one pursued a continuation of the commitments under the Kyoto Protocol, while the second option advocated for a new approach that would involve a growing number of Parties. Negotiations on the two alternatives led to the 2009 Copenhagen Conference. Even though it was deemed as a failure at the time, it is possible to see the first steps toward a new approach to deal with climate change that was rather different from the approach under the Kyoto Protocol[3]. Furthermore, the new features adopted in the Copenhagen Accord are the basis upon which the Paris Agreement would be structured[4]. The new architecture provided by the Copenhagen Accord was consequently developed and included into the United Nations Framework Convention on Climate Change (UNFCCC) regime in the following years during international negotiations held in Cancún 2010, Durban 2011, Doha 2012, Warsaw 2013 and Lima 2014[5]. The nine-year-long negotiating process ultimately led to the adoption of the Paris agreement which was able to involve 197 Parties, 175 of which have already ratified it as of April 2018[6]. The characteristics of the mentioned new approach that was developed during the negotiation stage of the Paris Agreement will be discussed in greater details later on in the following sections of this chapter.

The Paris Agreement formally is an Annex of the Decision taken by the 21st Conference of the Parties held in Paris from 30th November to 13th December 2015. The Paris Agreement is constituted by a preamble and 29 articles[7].

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[1] Massimiliano Montini, 'Riflessioni Critiche sull'Accordo di Parigi sui Cambiamenti Climatici' (2017) 100.3 Rivista di Diritto Internazionale 719, 724.
[2] Daniel Bodansky, 'The Paris Climate Change Agreement: a New Hope?' (2016) 110.2 American Journal of International Law 288, 292.
[3] Montini, *supra* note 1, 722.
[4] Ibid. 732.
[5] Ibid. 723.
[6] UNNFFCC, 'Paris Agreement – Status of Ratification' <https://unfccc.int/process/the-paris-agreement/status-of-ratification> accessed 13 April 2018.
[7] Paris Agreement (Dec. 13, 2015), *in* UNFCCC, Report of the Conference of the Parties on its Twenty-First Session [hereinafter COP Report and session number], Addendum, at 21, UN Doc. FCCC/CP/2015/10/Add.1 (Jan. 29, 2016) [hereinafter Paris Agreement].

The Paris Agreement is a treaty governed by international law. The definition of a treaty can be found in article 2, paragraph 1 letter (a) and letter (b) of the Vienna Convention on the Law of Treaties 1969. Mentioned article describes a treaty as *"an international agreement concluded between States in written form and governed by international law,"*[8] by which a State establishes its consent to be bound by it through means of *""Ratification", "acceptance", "approval" and "accession""*[9]. According to the Vienna Convention's definition, Bodansky shows that the Parties implied to create a legal agreement by including article 20 and article 21 which gave the agreement its international legal form of a treaty[10]. In fact, article 20, paragraph 1 of the Agreement deals with the purpose of signature, which was open from 22 April 2016 to 21 April 2017 at the United Nations Headquarters, moreover the agreement was open for accession from the following day it was closed for signature. Furthermore, article 21, paragraph 1 considers the entry into force of the Paris Agreement, which shall take place *"on the thirtieth day after the date on which at least 55 Parties to the Convention accounting in total for at least an estimated 55 per cent of the total global greenhouse gas emissions have deposited their instruments of ratification, acceptance, approval or accession"*[11].

The first section of this chapter will explain the innovative architecture of the Agreement and the new "Bottom-up" approach. The second section will discuss the new control and compliance mechanisms contained in the Paris Agreement. The third paragraph of this chapter will deal with market-based mechanism envisioned by the Agreement and with the issues of financing and technology transfer.

2.1. Bottom-up Approach

Perhaps the most important characteristic of the Paris Agreement is the unprecedented bottom-up architecture of the treaty. The bottom-up structure of the Agreement establishes that states autonomously regulate themselves in trying to solve climate change. This means that the parties are not bound to abide to a rule contained in the Agreement which establishes compulsory emission reductions. Actually, the emission reduction targets are imposed by the parties themselves. In fact, they autonomously contribute to reduce their GHG emissions through the system of Nationally determined contributions (NDCs). Scholars hold different

[8] Vienna Convention on the Law of Treaties (adopted 23 May 1969, entry into force 27 January 1980) 1155 UNTS 331, article 2(1)(a).
[9] Ibid. 2(1)(b).
[10] Bodansky, *supra* note 2, 296.
[11] Paris Agreement, *supra* note 7, article 21, paragraph 1.

opinions on the efficacy of such new system[12]. This new approach marks a sharp difference with earlier Multilateral Environmental Agreements (MEAs) and represents an unicum in the field of international environmental law. Kyoto Protocol's article 3, paragraph 1 mandates that countries included in Annex I should reduce their GHG emissions by 5 per cent below 1990 levels during the first commitment period 2008-2012[13]. The Kyoto Protocol is a perfect example of a top-down approach that mandates reduction targets which are legally binding upon states. A bottom-up approach on the other hand, is not framed to produce legally binding targets. The reason for the shift in paradigm in MEAs from top-down to bottom-up can be found in the negotiating process that eventually lead to the adoption of the Paris Agreement. In fact, the United States subordinated their participation to the imposition of commitments also to emerging economies like India, but especially China[14]. The mentioned countries are respectively the second, the fourth and the first emitting economies in the world[15]. Any multilateral environmental agreement (MEA) that attempts to effectively deal with climate change has to include as many countries as possible, but especially those countries which are responsible for the majority of anthropogenic greenhouse gas emissions. The Kyoto Protocol differentiated between Annex I and non-Annex I countries and posed binding reduction targets only to the former group and exempted developing economies from GHG reduction commitments[16]. In order to avoid the shortcomings of the Kyoto Protocol[17], accommodations had to be made during the negotiation stage. Firstly, developing countries and especially China refused to commit themselves to legally binding reduction targets similar to those contained in the Kyoto Protocol. Secondly, the USA prevented the draft from containing any legal obligation, otherwise it could not be adopted as a presidential executive agreement and ratification by the Senate was therefore compulsory[1819]. So, the compromise was a legally binding treaty containing non-legally binding provision[20]. The non-legally binding character can also be seen in the many "should" used by key articles in the Agreement which can be interpreted as recommendations

[12] Gervasi in his work 'Rilievi Critici sull'Accordo di Parigi: le sue Potenzialità e il suo Ruolo nell'Evoluzione dell'Azione Internazionale di Contrasto al Cambiamento Climatico' has criticized NDCs as insufficient to combat climate change and not able to prevent free-riding, whereas Bodansky in 'The Paris Climate Change Agreement: a New Hope?' maintains a more positive perspective thanks to the global stocktake system and to the transparency framework.
[13] Kyoto Protocol to the United Nations Framework Convention on Climate Change (adopted 11 December 1997, entered into force 16 February 2005) 2303 UNTS 162 [hereinafter Kyoto Protocol], article 3, paragraph 1.
[14] Montini, *supra* note 1, 725.
[15] European Commission, 'CO_2 Time Series 1990-2015 per Region/Country' <http://edgar.jrc.ec.europa.eu/overview.php?v=CO2ts1990-2015&sort=des9> accessed 09 April 2018.
[16] Kyoto Protocol, *supra* note 12, article 3.
[17] Bodansky, *supra* note 2, 301 as stated "The countries willing to accept Kyoto emission targets represented only about a quarter of global emissions in the first commitment period, and this number has dropped to less than 15 percent in Kyoto's second commitment period".
[18] Bodansky, *supra* note 2, 294 and Montini, *supra* note 1,726.
[19] "The Constitution of the United States" article 2, section 2, clause 2.
[20] Montini, *supra* note 1,726.

thus lacking any legal force. In fact, the United States expressively vetoed the use of the word "shall" which is used for prescriptions and therefore, apart from giving to many articles the character of a legal obligation, would also oblige the US Senate to ratify the Agreement[21].

The new paradigm involves radical changes in the structure of the Agreement which I will discuss in the following order. Firstly, I will analyse the system of the Nationally Determined Contributions (NDCs) and the global stocktake. Secondly, I will discuss the issue of differentiation between countries and the principle of the common but differentiated responsibilities and respective capabilities (CBDR-RC).

2.1.1. Nationally Determined Contributions (NDCs)

The instrument that makes the whole bottom-up structure work is the Nationally Determined Contributions system. NDCs represent the efforts, strategy and commitments that each country declares to implement in order to reduce their national emissions and to adapt to the adverse effects of climate change[22]. Article 4, paragraph 2 describes the interaction between domestic climate policy and its relationship with NDCs. In fact, the former shall be implemented to realize the latter[23]. This is sort of a mild commitment which however gives substance to NDCs as outcome that should be pursued in national policies[24]. Already COP 19 and COP 20 urged countries to submit their Intended Nationally Determined Contributions (INDCs) in advance of COP 21 In Paris[25]. In fact, before the adoption of the Paris Agreement the NDCs were called INDCs in order to facilitate the negotiation process. As explained by Gervasi, however even the change in name does not confer a legal binding character to NDCs as they are unilateral acts decided by the states Parties to the UNFCCC[26]. COP 21 itself expressed doubts upon the accomplishment of the goal stated in article 2, paragraph 1 letter (a) of the Agreement to hold *"the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels"*[27]. So, it *"notes with concern"* that the NDCs submitted at the time were not enough to accomplish the temperature target in article 2 of the Agreement and exhorts the Parties to take

[21] Bodansky, *supra* note 2, 294.
[22] Bodansky, *supra* note 2, 301.
[23] Paris Agreement, *supra* note 7, article 4, paragraph 2.
[24] Bodansky, *supra* note 2, 304.
[25] Further Advancing the Durban Platform, Dec. 1/CP.19 (Nov. 23, 2013), *in* COP Report No. 19, Addendum, at 3, UN Doc. FCCC/CP/2013/10/Add.1 (adopted 31 January 2014); Lima Call for Climate Action, Dec. 1/CP.20 (Dec. 14, 2014), *in* COP Report No. 20, Addendum, at 2, UN Doc. FCCC/CP/2014/10/Add.1 (adopted 2 February 2015).
[26] Mario Gervasi, *'Rilievi Critici sull'Accordo di Parigi: le sue Potenzialità e il suo Ruolo nell'Evoluzione dell'Azione Internazionale di Contrasto al Cambiamento Climatico'* (2016) 1 La Comunità Internazionale 21, 47.
[27] Paris Agreement, *supra* note 7, article 2.

more ambitious reduction goals[28]. According to UNFCCC data by *"April 2016, a total of 190 Parties had communicated an INDC (97% of all Parties to the UNFCCC) with a total CO_2 coverage of 94.6%"*[29]. The uncertainties stated by COP 21 were also scientifically confirmed by models on climate change which predict an "increase in global temperatures of approximately 2.7°C above pre-industrial levels"[30]. Furthermore, according to article 4, paragraph 9 NDCs are posed to a periodical review every five years[31]. In addition to article 4, paragraphs 23 and 24 of COP 21 Decision state that the review would start in 2020 and at the same time Parties are also requested to update their targets up to 2025 or 2030 [32]. This attempt to take more effective actions against climate change must be read in conjunction with article 3 of the Paris Agreements. It exhorts the Parties to take more stringent reduction commitments at every update, thus NDCs' commitments should represent a progression over time[33]. NDCs try to address climate change, which is a collective action problem[34], adopting on a bottom-up approach, that relies upon individual actions by member states[35]. In fact, the bottom-up architecture focuses on national contributions to emission reductions and therefore does not prevent the *free-rider problem*[36]. In order to increase the Parties' awareness toward the accomplishment of the 2 °C maximum increase objective and disincentivize free-riding, the Paris Agreement established a new body within the Conference of the Parties: the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA). The CMA's role is described by article 14, paragraph 1 which states that it *"shall periodically take stock of the implementation of this Agreement to assess the collective progress towards achieving the purpose of this Agreement and its long-term goals (referred to as the "global stocktake")"*[37]. Moreover, the stocktakes shall also consider progress in other areas of the Agreement such as *"mitigation, adaptation and the means of implementation and support"*[38]. It is possible to understand the reason behind the global stocktake. In fact, since the nature of the Agreement is

[28] Adoption of the Paris Agreement, Decision 1/CP.21, *in* COP Report No. 21, Addendum, at 2, UN Doc. FCCC/CP/2015/10/Add.1 (Jan. 29, 2016), paragraph 17 [hereinafter Paris Decision].
[29] UNFCCC, 'Nationally Determined Contributions (NCDs)' <http://unfccc.int/focus/items/10240.php> accessed 09 April 2018.
[30] Thomas Day et al., 'Preparation of Intended Nationally Determined Contributions (INDCs) as a Catalyst for National Climate Action' (2015) NewClimate Institute <https://www.transparency-partnership.net/sites/default/files/indc_as_catalyst.pdf> accessed 13 April 2018, page 3.
[31] Paris Agreement, *supra* note 7, article 4, paragraph 9.
[32] Paris Decision, *supra* note 29, paragraphs 23 and 24.
[33] Paris Agreement, *supra* note 7, article 3.
[34] The collective action problem describes a situation in which multiple individuals would all benefit from a particular action, but the associated costs are so high that any individual will undertake the action.
[35] Gervasi, *supra* note 27, 28.
[36] The free-rider problem occurs when individuals who benefit from goods or services do not pay for them, but instead the collective pays for those goods or services, thus incentivizing the deviant behaviour. The free-rider's problem results in an under provision of mentioned goods or services.
[37] Paris Agreement, *supra* note 7, article 14, paragraph 1.
[38] Ibid.

to limit the increase in temperature, which is a collective outcome, progress in climate change mitigation and all the other relevant fields must also be assessed collectively. Furthermore, article 14, paragraph 3 describes the relationship between CMA's stocktakes and NDCs: according to the information and guidance provided by the former, the Parties shall update and enhance the latter[39]. However, as Gervasi correctly states, the report provided by the CMA is collective in nature, so it will be difficult to assess bad practices or monitor Parties that deviate from their NDCs[40]. Additionally, the second paragraph of article 14 declares that the global stocktake shall take place every five years starting from 2023[41]. Finally, at the end of this paragraph it is possible to delineate a medium, long-term timeline established by the relevant provisions regarding NDCs and the global stocktake[42]:

First, according to paragraph 20 of the Decision, a "facilitative dialogue" among the Parties will be held in 2018 in order to assess the collective progress in regard of the long-term objective of the Agreement[43];

Second, according to article 4, paragraph 9 the first five-year review of NDCs will take place in 2020. Those Parties whose NDCs run until 2025 are requested to submit new ones, taking into consideration the useful information provided by the facilitative dialogue of 2018[44]. Moreover, those Parties whose NDCs run until 2030 can update theirs in light of the results of facilitative dialogue[45].

Third, according to paragraph 35 of the Decision, by 2020 Parties shall have communicated their mid-century, long-term low greenhouse gas emission development strategies[46];

Fourth, the CMA will conduct its first global stocktake in 2023 and will inform the Parties of the results[47];

Fifth, the second review of NDCs will take place in 2025. According to paragraph 25 of the Decision, the Parties are requested to communicate their successive NDCs, informed by the outcome of the first global stocktake, nine to twelve months before the following CMA[48].

From 2025 on the mechanism will continue working. The NDCs will be updated by the Parties every five years (with information coming from the global stocktake) and the CMA will hold its global stocktake

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[39] Paris Agreement, *supra* note 7, article 14, paragraph 3.
[40] Gervasi, *supra* note 27, 43.
[41] Paris Agreement, *supra* note 7, article 14, paragraph 2.
[42] Bodansky, *supra* note 2, 316.
[43] Paris Decision, *supra* note 29, paragraph 20.
[44] Ibid. 23.
[45] Ibid. 24.
[46] Paris Decision, *supra* note 29, paragraph 35.
[47] Paris Agreement, *supra* note 7, article 14, paragraph 2.
[48] Paris Decision, *supra* note 29, paragraph 25.

again every five years. The structure of the Paris Agreement was designed to work practically forever, with NDCs being updated thanks to the global stocktake and the global stocktake assessing progress reached by NDCs[49].

2.1.2. Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC)

The bottom-up structure applied by the Paris Agreement to deal with climate change does not require legally binding reduction outcomes, moreover it does not even differentiate between Member States. In fact, as explained above, the Parties to the Agreement autonomously decide their NDCs without any type of obligation or monitoring system imposed on them (the issue of a soft compliance mechanism will be dealt in the next section of this chapter). Furthermore, the Paris Agreement further develops the principle of the (CBDR-RC) and reaches a turning point in its formulation. The Agreement overcomes the strict differentiation between Annex I and non-Annex I countries in favour for a milder approach based on the Parties' willingness to cooperate. The abolishment of different regulated reduction outcomes based on countries' economic performances is deemed to be a remarkable step in international environmental law and one of the fundamental characteristic upon which the bottom-up structure is built upon[50].

The issue of CBDR-CR dates back as far as "The Rio Declaration on Earth and Development (1992)", specifically, principle 7 of mentioned declaration describes it[51]. According to this principle countries recognize that they bear different historical responsibilities in relation climate change, moreover they also have different capabilities in order to solve the climate change problem. Therefore, developed countries, which have a longer polluting history and own advanced technologies, should contribute more to climate change mitigation, whereas developing states should contribute less because of their late development and their lack of technologies. This principle was put in practice by the UNFCCC which distinguishes between Annex I countries and non-Annex I countries[52]. Then the differentiation between Annex I and non-Annex I according to the principle of CBDR-RC was introduced in the Kyoto Protocol. It provided, according to article 4, paragraph 1, legally binding reduction outcomes for counties mentioned in Annex I of the UNFCCC[53]. This distinction was also the reason behind the need to negotiate a new accord.

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[49] Montini, *supra* note 1,751.
[50] Montini, *supra* note 1, 724.
[51] Rio Declaration on Environment and Development (adopted 13 June 1992) UN Doc. A/CONF.151/26 (vol. I); 31 ILM 874 (1992), principle 7.
[52] United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107 [hereinafter UNFCCC].
[53] Kyoto Protocol, *supra* note 12, article 4.1

In fact, in twenty years since the adoption of the Protocol, the global scenery had changed dramatically. Non-Annex I countries polluted as much as developed countries, however they did not have any obligation to reduce emissions, along these lines China became the world's largest emitter[54]. According to this change in global emission patterns, the USA, the second largest emitter globally[55], bounded their participation to any future climate change convention upon commitments for developing country Parties as well[56]. Under these new circumstances a joint presidential press release by the USA and China, the world's largest emitters, boosted negotiations to reach the Paris Agreement. Most importantly paragraph 2 of mentioned press release reinstated the importance of the principle of CBDR-RC and added to it the phrase in "light of different national circumstances"[57].

The principle of CBDR-RC, in light of different national circumstances is a key feature of the Paris Agreement. It is the basis upon which the whole Agreement draws inspiration as it was introduced in article 2, paragraph 2, right below the Agreement's goal[58]. In fact, as the duty to limit the increase in temperature is global, therefore, responsibilities are common as well[59]. However, Parties decided to differentiate across the degree of responsibilities hold by different Parties through the system of NDCs. Even though obligations regarding NDCs are common among states, as stated by article 4, paragraphs 2, 6, 8, 9 and 13[60], they also embody self-differentiation as each party decide its owns based on its national circumstances[61]. Furthermore, CBDR-RC is the key principle regarding the global peak of GHG emissions stated in article 4 paragraph 1[62]. This article introduces the aspect of global carbon peak (a common responsibility) but recognizes that it will take a longer period of time for developing countries (a differentiated responsibility). In acknowledging this argument, article 4 also introduces the concept of "carbon space". Carbon Space is an important issue for developing countries especially for India[63]. According to this topic developing countries would need more time to peak their emission since they need to develop first and once they have acquired a relevant level of social development and gain the necessary technology they can start contributing to climate change

[54] Montini, *supra* note 1, 730.
[55] European Commission, *supra* note 15.
[56] Montini, *supra* note 1, 725.
[57] White House Press Release, U.S.-China Joint Presidential Statement on Climate Change (Sept. 25, 2015), *at* <https://www.whitehouse.gov/the-press-office/2015/09/25/us-china-joint-presidential-statement-climate-change>, paragraph 3, accessed 2 May 2018.
[58] Paris Agreement, *supra* note 7, article 2.
[59] Paris Agreement, *supra* note 7, article 2.
[60] Paris Agreement, *supra* note 7, article 4, paragraphs 2, 6, 8, 9 and 13.
[61] See page 3.
[62] Paris Agreement, *supra* note 7, article 4.
[63] Avinash Godbole, *'Paris Accord and China's Climate Change Strategy: Drivers and Outcomes'* (2016) 72.4 India Quarterly 361, 369.

mitigation with more effective policies. However, developed countries cannot increase their emission since they bear a historic responsibility towards climate change, therefore they have already exhausted their carbon space which contributed to their economic and social development. The recognition of carbon space is accepted by the Agreement in article 4, paragraph 3 which encourages the Parties to undertake ever stronger commitments in their NDCs bearing in mind CBDR-RC, in light of different national circumstances[64]. Furthermore, carbon space and the principle of CBDR-RC, in light of different national circumstances are intertwined again in article 4 paragraph 19, which deals with long-term emission abatement strategies taking into account the above-mentioned principle[65].

2.2. Control and Compliance Mechanisms

The Paris Agreement, as mentioned in earlier paragraphs of this chapter[66], does not contain any legally binding rule regarding GHG emission reductions, but instead it relies on NDCs in order to achieve its goals. Even though the Paris Agreement acts differently from the Kyoto Protocol[67], it actually contains a control and a compliance mechanism which work accordingly to a bottom-up approach. In fact, a top-down approach with legally binding rules can contain a strong control and compliance mechanism, however a bottom-up approach, which is based upon the Parties' cooperation, adopts a different mechanism that is facilitative in nature and relies on transparency, moreover it cannot possibly punish wrongdoings[68].

In the first paragraph of this section I will discuss the principle of "due diligence", in the second one I will analyze the transparency framework, while I will deal with the compliance mechanism in the third paragraph of this section.

2.2.1. The Principle of Due Diligence

Montini rightly explains that the absence of legally binding requirements regarding mitigation of climate change is compensated by binding procedural requirements[69]. In fact, Article 4, paragraph 8 of the Paris Agreement prescribes that upon communication of their NDCs, the Parties *"shall provide the information necessary for clarity, transparency and understanding"* taking into also the relevant decisions

[64] Paris Agreement, *supra* note 7, article 4, paragraph 3.
[65] Ibid. 4.19.
[66] See page 2.
[67] Kyoto Protocol, *supra* note 12, article 4.
[68] Montini, *supra* note 1, 745.
[69] Ibid 737.

provided by the CMA[70]. It is interesting to note the use of "shall" instead of "should" which according to the analysis undertaken earlier in this chapter[71] gives rise to an obligation upon the Parties[72]. Furthermore, article 4, paragraph 13, prescribes that Parties *"shall account"* for their NDCs in what can be defined as a "common accounting system"[7374]. They must, therefore, provide all the relevant information and promote transparency using the guidance provided by the CMA[75]. In the last two paragraphs it is possible to appreciate the role of the CMA as body which develops guidance and promotes discussion among its members. As the CMA develops its procedures it is likely to foster Parties' compliance towards the achievement of their NDCs. In fact, it is thought that a high degree of transparency and circulation of information would let Member States be accountable for their actions. Consequently, this type of accountability disincentivize non-coherent behaviours as the deviant Party would be easily spotted by all the other members[76]. So, even if Parties are not legally bound to comply and to not deviate from their NDCs, it is hoped that peer pressure would be enough to promote compliance. It was described that the Paris Agreement work through a system of due diligence combined with peer-to-peer pressure[77]. Additionally, the principle of due diligence can also be inferred from article 4, paragraph 2, second sentence which reads *"Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions"*[78]. Even though the use of "shall" in this article, it does not give rise to any obligation since it is referred to the pursuit of domestic mitigation measures and not to NDCs which are the object of the first sentence of this article. So, the Parties have a moral obligation towards implementing domestic mitigation measures in light of achieving their NDCs, which is different from legal obligation towards NDCs. This sort of obligation of due diligence is a mild commitment which refers to a standard of conduct and cannot possibly give rise to obligations towards NDCs[79].

Finally, binding procedural requirements and the principle of due diligence are likely to fulfil their duty and increase compliance to an agreement that does not contain binding rules applying to GHGs emission reductions.

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[70] Paris Agreement, *supra* note 7, article 4, paragraph 8.
[71] See above page 8.
[72] Bodansky, *supra* note 2, 294.
[73] Montini, *supra* note 1, 737.
[74] Paris Agreement, *supra* note 7, article 4, paragraph 13.
[75] Ibid.
[76] Bodansky, *supra* note 2, 290.
[77] ; Bodansky, *supra* note 2, 301; Montini, *supra* note 1, 738.
[78] Paris Agreement, *supra* note 7, article 4, paragraph 2.
[79] Montini, *supra* note 1, 738.

2.2.2. The Transparency Framework

As described in the due diligence paragraph[80], transparency is the mechanism responsible to hold the Parties accountable to what they do[81]. In fact, the Paris Agreements lacks a control and a monitor system regarding the implementation and supervision of the unilaterally declared NDCs[82]. So, transparency acts as a principle of soft law that tries to correct these absences, induced by the bottom-up architecture of the Agreement, and also tries to foster compliance towards the accomplishment of the NDCs[83]. The new transparency framework envisioned by the Paris Agreement is established under article 13[84]. It is rather different from the previous transparency framework established under the Cancún Agreement during COP 16[85]. In fact, the Cancún Agreement established two different bodies: the International Assessment and Review (IAR) and the International Consultations and Analysis (ICA)[86]. The former applied for developed countries whereas the latter applied for developing country Parties. However, the new *"enhanced transparency framework for action and support"*[87] under the Paris Agreement, has embodied into it the new bottom-up approach. On the one hand, it does not distinguish between developed and developing countries any longer but prescribes a unique entity to all the Members, thus rising all the Parties to the same level. On the other hand, it addresses differentiation according to the principle of CBDR-RC, in light of national different circumstances, by including flexibilities *"which takes into account Parties' different capacities"*[88]. The theme is also dealt with in the second paragraph of article 13 which states developing countries that flexibility regarding issues of transparency shall be granted flexibility in light of their capacities[89]. The transparency framework approaches three different domains: mitigation[90], adaptation[91] and finance[92].

As far as mitigation is concerned, the transparency framework establishes a common, mandatory system[93]. However, it differentiates among the Parties as developing countries are required to submit their

[80] See page 10.
[81] Bodansky, *supra* note 2, 311.
[82] Montini, *supra* note 1, 743.
[83] Bodansky, *supra* note 2, 311.
[84] Paris Agreement, *supra* note 7, article 13.
[85] Bodansky, *supra* note 2, 311.
[86] Cancún Agreements: Outcome of the Work of the Ad Hoc Working Group on Long-Term Cooperative Action under the Convention, Dec. 1/CP.16 (Dec. 10–11, 2010), *in* COP Report No. 16, Addendum, UN Doc. FCCC/CP/2010/7/Add.1 (March 15, 2011) [hereinafter Cancun Agreements], paragraphs 44, 46 (d), 63 and 66.
[87] Paris Agreement, *supra* note 7, article 13, paragraph 1.
[88] Ibid.
[89] Ibid. 13.2.
[90] Ibid. 13.7.
[91] Ibid. 4.8.
[92] Ibid 13.9 and 10.
[93] Bodansky, *supra* note 2, 311.

GHG inventories at least biennially, as stated in paragraph 90 of the Decision of the Parties[94], while developed countries are requested to do the same on an annual basis[95]. Furthermore, in an attempt to increase transparency, the Parties shall also provide all the relevant information in order to track the progress in the implementation and achievement of NDCs, as it is described by article 13, paragraph 7[96]. The information provided under article 13, paragraph 7, subsequently undergoes a technical expert review which revises Parties' efforts in achieving and implementing the NDCs, moreover it identifies areas of improvements always keeping in mind the different national circumstances and capacities of developing country Parties[97]. Article 13, paragraph 13 reinstates the importance of the CMA which should provide procedure and guidance to be followed by the technical review in order to provide the same CMA with the necessary relevant information to conduct its global stocktakes[98]. The nature of the technical expert review is only facilitative and non-punitive as established by paragraph 3 of the above-mentioned article[99]. So, even if, after the technical review, the inefficacy of domestic policies to achieve NDCs is ascertained, no sanctions can be assigned to non-compliant Parties[100].

The transparency framework in respect to adaptation is describe in paragraph 8 and only recommends that Parties provide information, moreover it excludes that information to international review[101].

The transparency framework in relation to finance is governed by article 13, paragraphs 9, 10 and 11. The first paragraphs state that *"Developed country Parties shall, and other Parties that provide support should, provide information on financial, technology transfer and capacity-building support provided to developing country Parties"*[102]. This paragraph mandates that developed countries are obliged to provide information regarding their support to developing countries, whereas reporting is only recommended to developing countries that choose to do the same. This differentiation is highlighted by the different terms used in relation to the two sets of countries: shall for developed ones, while should for developing ones. The exhortation to disclose information is also employed in paragraph 10 regarding those developing countries

[94] Paris Decision, *supra* note 29, paragraph 90.
[95] Ibid. 92 (e).
[96] Paris Agreement, *supra* note 7, article 13, paragraph 7.
[97] Ibid. 13.11 and 12.
[98] Ibid. 13.13.
[99] Ibid.
[100] Gervasi, *supra* note 27, 44.
[101] Paris Agreement, *supra* note 7, article 13, paragraph 8.
[102] Ibid. 13.9.

that receive the support by the donor Parties[103]. Finally, as for mitigation, paragraph 11, disciplines that all the information gathered shall undergo the technical expert review.

Article 13, paragraph 13 affirms the communal nature of the transparency framework, moreover also the guidelines and procedures developed by the CMA will be common to all member Parties[104]. Even though, the transparency framework introduced by the Paris Agreements overcomes the differentiation between developed and developing countries, present in the previous Cancún Agreements, there are some arrangements that might eventually reintroduce it[105]. For example, article 13, paragraph 3 states that *"the transparency framework shall build on and enhance the transparency arrangements under the Convention"*[106], which are the IAR and ICA, moreover they "*shall form part of the experience drawn upon"* while developing the new transparency framework's rules[107]. Furthermore, paragraph 89 of the Paris Decision affirms that developing countries that need flexibility in light of their national circumstance shall be provided with flexibility in implementing the transparency framework[108].

2.2.3. The Compliance Mechanism

In addition to the new transparency framework, the Paris Agreement also establishes a new implementation and compliance mechanism. Mentioned mechanism is instituted under article 15, paragraph 1 of the Agreement[109]. Differently for the transparency framework, the implementation and compliance mechanism is only described in a few details. Article 15, paragraph 2 establishes that the new mechanism shall work through a committee which will be formed by experts. Moreover, the committee shall be facilitative, transparent, non-punitive, non-adversarial and should carry out its duties taking into consideration the different national capabilities and circumstances of the Parties[110]. Furthermore, the implementation and compliance mechanism shall operate under the procedures adopted by the CMA and report to it annually[111].

The Paris Agreement does not define the relationship between the control mechanism embodied by the transparency framework and the implementation and compliance mechanism described above. However,

[103] Ibid 13.10.
[104] Paris Agreement, *supra* note 7, article 13, paragraph 13.
[105] Bodansky, *supra* note 2, 312.
[106] Paris Agreement, *supra* note 7, article 13, paragraph 3.
[107] Ibid. 13.4.
[108] Paris Decision, *supra* note 29, paragraph 89.
[109] Paris Agreement, *supra* note 7, article 15, paragraph 1.
[110] Ibid. 15.2.
[111] Ibid. 15.3.

the Agreement does describe that both systems should be facilitative in nature[112], thus reflecting the bottom-up architecture of the Agreement. According this characteristic, the compliance mechanism envisioned by the Paris Agreement is greatly different from the one established under the Kyoto Protocol[113]. Under article 18 of the mentioned Protocol, the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol was allowed to establish a compliance system which would have dealt with cases of non-compliance with a punitive and binding approach[114], thus in accordance with the top-down structure of the Protocol. Montini rightly affirms that the compliance mechanism of the Paris Agreement represents an involution in comparison to the one established by the Kyoto Protocol[115]. Nonetheless, they are designed around two different underlying architectures and this aspect justifies the adoption of two different compliance mechanisms. Moreover, the compliance system envisioned by the Paris Agreement is similar to others compliance mechanisms provided by other MEAs[116], like the one established by article 8 of the Montreal Protocol on Substances the Ozone Layer[117] which again is non-punitive[118].

2.3. Market-Based Mechanism, Finance and Technology Transfer

The last section of this chapter represents the first attempt to link international environmental law and international trade law. The relationship between the two topics will be the centre of the discussion of the second chapter. It will specifically discuss the relationship between the Paris Agreements and the various international treaties that form the WTO. What I will discuss here are the provisions contained in the Paris Agreement regarding the market-based mechanisms, finance and technology transfer. This last section of the chapter is structured in the following order: it will firstly discuss the new market-based mechanisms introduced by the Paris Agreement, secondly it will analyse the provisions regarding finance and thirdly deal with the article regarding technology transfer.

[112] Ibid. 13.3 and 15.2.
[113] Gervasi, *supra* note 27, 45.
[114] Kyoto Protocol, *supra* note 12, article 18.
[115] Montini, *supra* note 1, 746.
[116] Montini, *supra* note 1, 746.
[117] Montreal Protocol on Substances that Deplete the Ozone Layer (adopted 16 September 1987, entered into force 1 January 1989) 1522 UNTS 3 [hereinafter Montreal Protocol], article 8.
[118] Gregory Rose et al., *Compliance Mechanisms Under Selected Multilateral Environmental Agreements* (UNEP Earthprint 2007), page 76.

2.3.1. Market-Based Mechanisms

The market-based mechanisms envisioned by the Paris Agreement are disciplined by article 6. This article regulates the establishment of two different market-based approaches. The first one is described by article 6, paragraph 2 which recognize the ability by Member States to engage on a voluntary basis in cooperative approaches that involve the use of Internationally Transferred Mitigation Outcomes (ITMOs)[119]. ITMOs should be used in order to achieve NDCs, moreover they should promote sustainable development, environmental integrity and transparency. Furthermore, the Parties shall also adopt a robust counting system that ensures the avoidance of "double counting" of ITMOs and draws upon the guidance developed by the CMA[120]. It is interesting to note the similarities between this market-based approach to GHGs reductions and the emission trading system (ETS) developed by the Kyoto Protocol. In fact, the Paris Agreement introduces the new concept of ITMOs in order to differentiate from the term used by the previous cooperative approach[121].

The second market-based approach is called the sustainable development mechanism (SDM) and its form and objectives are delineated by in article 6, paragraph 4[122]. The SDM shall *"promote the mitigation of greenhouse gas (GHG) emissions while fostering sustainable development"*[123]. It is inspired by the Clean Development Mechanism established by the Kyoto protocol, however the SDM has a connotation which focuses more on the promotion of sustainable development[124]. Drawing on the experience gathered by the CDM, the SDM is also likely to generate emission reduction offsets that the Parties can count in order to achieve their NDCs. The SDM can generate offsets for project-based emission reductions but might also include emission reduction policies and programs. Moreover, it generates offsets for emission reductions in both developed and developing countries, thus merging the CDM and the Joint implementation both contained in the Kyoto Protocol[125]. Additionally, the CMA should designate a supervisory body for the implementation of the SDM[126]. Finally, the CMA shall also provide rules, modalities and procedure for the

[119] Paris Agreement, *supra* note 7, article 6, paragraph 2.
[120] Ibid.
[121] Montini, *supra* note 1, 739.
[122] Bodansky, *supra* note 2, 307.
[123] Paris Agreement, *supra* note 7, article 6, paragraph 4.
[124] Montini, *supra* note 1, 739.
[125] Bodansky, *supra* note 2, 307.
[126] Paris Agreement, *supra* note 7, article 6, paragraph 4.

SDM[127] and, as stated by paragraph 37, letter f of the Paris Decision, the CMA shall do so by drawing on the experience gained by similar mechanisms under the UNFCCC and the Kyoto Protocol[128].

2.3.2. Finance

As far as Finance is concerned, article 9, paragraph 1 reinstates developed countries' obligations under the UNFCCC to provide financial resources and assistance to developing country Parties in relation to mitigation and adaptation to climate change[129]. In fact, article 4, paragraphs 3 and 4 of the UNFCCC mandate that countries in Annex II (a subset of Annex I) shall provide financial and adaptation assistance to developing countries[130]. Nonetheless, the second paragraph of article 13 enlarges the pool of donors to "Other Parties" that are encouraged to contribute voluntarily[131]. This las provision is weaker than the one pertaining to developed countries, but it is a turning point because it starts to erode the differences between legally-obliged donors and relative recipients[132]. The Paris Agreement does not contain in itself any quantitative financial goal relating to the amount of resources to be mobilized under the new Agreement. However, Paris Decision paragraph 53 declares that developing countries should continue with their existing collective mobilization goal of USD 100 billion per year through 2025[133]. The reference to paragraph 8 of the Copenhagen Accord is explicit because a mobilization goal of USD 100 billion was the first time reported in that occasion[134]. Moreover, paragraph 53 of the Paris Agreement also affirms that prior to 2025 the CMA *"shall set a new collective quantified goal from a floor of USD 100 billion a year"*[135]. Paragraph 53 is directly linked to article 9, paragraph 3 as expressed by its first sentence. This article calls for developed countries to take the lead in mobilizing financial resources as part of a global effort, thus recognizing the importance of the enlargement of the pool of donors. Moreover, it also states that mobilization of climate finance "should" represent a progression, starting from the 100 USD mentioned in paragraph 53[136]. Additionally, paragraph 4 affirms that financial resources mobilized against climate change should be balanced between mitigation and adaptation, with a special focus for least developed countries and

[127] Paris Agreement, *supra* note 7, article 6, paragraph 7.
[128] Paris Decision, *supra* note 29, paragraphs 37, letter f.
[129] Paris Agreement, *supra* note 7, article 9, paragraph 1.
[130] UNFCCC, *supra* note 52, article 4 paragraphs 3 and 4.
[131] Paris Agreement, *supra* note 7, article 9, paragraph 2.
[132] Bodansky, *supra* note 2, 310.
[133] Paris Decision, *supra* note 29, paragraph 53.
[134] Copenhagen Accord (Dec 18, 2009), *in* COP Report No. 15, Decision 2/CP.15,UNDoc. FCCC/CP/2009/11/Add.1, at 4 (March 30, 2010) para 8.
[135] Paris Decision, *supra* note 29, paragraph 53.
[136] Paris Agreement, *supra* note 7, article 9, paragraph 3.

small island developing States (SIDS) that are likely to bear the worst consequences of climate change notwithstanding that they have contributed the least to it[137]. Collectively, article 9 does not create any new financial obligations for developed countries in regard to finance. Finance had been a hard topic during the negotiations of the Paris Agreement as developing countries wanted more commitments by developed countries, while the latter declined any new financial duty and tried to enlarge the donor pool[138]. In the end it looks like developing countries have settled for something not really new while maintaining higher expectations for the future. In fact, the only new obligations posed on developed countries are only procedural in nature and are related biennial reports on their level of projected financial resources[139].

2.3.3. Technology Transfer

The provisions pertaining to technology transfer are governed by article 10 of the Paris Agreement. Mentioned provisions are primarily exhortative and programmatic in nature[140]. In fact, developed country Parties are only encouraged to accelerate the transfer of technology to developing countries with a view to enhance resilience and sustainable development as affirmed by paragraph 2[141]. So far, article 10 does not contain any legal obligation on the part of developed countries in collaborating with developing country Parties. However, paragraph 3 reintroduces into the Paris Agreement the Technology mechanism[142] envisioned by paragraph 117 of the Decision adopted by COP 16[143]. The role of the Technology Mechanism is to enhance technology transfer between Member States of the UNFCCC. Moreover, paragraph 4 governs the establishment of a new technology framework which should provide guidance to the work of the Technology Mechanism[144]. The role of the new technology framework is described with few details and most of its provision are only programmatic in nature, but generally it should promote technology development and transfer. Additionally, developed countries are also pushed to financially support developing countries to achieve technology development and transfer with support provided by the Financial Mechanism of the Convention[145]. Finally, the CMA during its global stocktakes is called take into account

[137] Ibid. 9.4.
[138] Bodansky, *supra* note 2, 310.
[139] Paris Agreement, *supra* note 7, article 9, paragraph 5.
[140] Ibid, 10.1.
[141] Ibid. 10.2.
[142] Ibid. 10.3.
[143] Cancún Agreements, *supra* note 85, paragraph 117.
[144] Paris Agreement, *supra* note 7, article 10, paragraph 4.
[145] Ibid. 10.5

the relevant information provided by the Parties in order to assess technology development and transfer[146]. It is possible to note the lack of commitments in relation to technology transfer and is likely that the new tasks carried out by technology framework established by the Agreement will be of minimal relevance.

[146] Ibid. 10.6.

3. The Paris Agreement and the World Trade Organization (WTO)

The Paris Agreement does not contain any direct reference to international trade[147]. However, understanding its relationship with the World Trade Organization (WTO) is fundamental in order to fully comprehend the possible ways according to which the Agreement may accomplish its purpose. The relation between trade and climate change have been acknowledged as far back as the UNFCCC. In fact, article 3, paragraph 5 of the Convention calls for an *"open international economic system that would lead to sustainable economic growth and development"* to address issues brought about by climate change, moreover the Parties should also abstain from measures which *"constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade"*[148]. Additionally, the UNFCCC recognizes that problems and damages that climate change is likely to cause in the future will bear a significant financial cost on behalf of the Parties. Consequently, article 3, paragraph 3 states that measures contrasting climate change *"should be cost-effective so as to ensure global benefits at the lowest possible cost"*[149].

It is recognized that climate change is likely to have remarkable consequences on countries' economies which will have to adapt to the new circumstances. Indeed, some countries, especially developing ones, will be more vulnerable to climate change as their financial constraints prevent them from spending the due resources on adaptation. Moreover, specialized economies may become very vulnerable as well. If the industries which they rely on happen to be adversely affected by climate change, they will lose significant amount of resources[150]. Global warming is also considered to have a substantial effect on the patterns of international trade since it changes countries' comparative advantages. In doing so, nations whose comparative advantages depend on agriculture are likely to be negatively affected as a result of climate change which may influence crop yields[151].

It is possible to see that international trade and climate change are closely intertwined with each other. As a result, there have already been disputes between Multilateral Environmental Agreements (MEAs) and international trade whose outcomes have been more favourable to the latter. As a matter of fact, production of goods by the industrial sector is a major contributor to climate change, therefore international

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[147] Ilmi Granoff, 'Trade Implications of Climate Policy After the Paris Outcome' (2016) 130 Commonwealth Trade Hot Topics 1, 5.
[148] UNFCC, *supra* note 52, article 3, paragraph 5.
[149] Ibid. 3.3.
[150] Ludivine Tamiotti et al, *Trade and Climate Change: A Report by the United Nations Environment Programme and the World Trade Organization* (UNEP/Earthprint 2009), 62.
[151] Ibid, 64.

trade in relation to trade in goods should be taken into account when dealing with issues of climate change[152]. However, trade in goods is not the only issue when dealing with climate change and the WTO. In fact, if effective measures which aim to mitigate the worst consequences of climate change are to be implemented, they are likely to be comprehensive and involve many areas of the WTO system.

In this chapter I will analyse the aspects of the WTO treaties that can effectively assist the implementation of the Paris Agreement or prevent its full application. In fact, the Agreement lacks binding commitments towards GHG emission reductions and its measures are only unilateral in nature. Moreover, it does contain a control and compliance mechanism, but its efficacy is doubt by scholars and conversely, it lacks a dispute settlement mechanism. This are all features that come in contact with the treaties creating the WTO. They may enhance the application of the Agreement or obstacle it, but much will depend on the interpretation that the WTO and the international community as a whole will have on climate change and its gravity.

First of all, I will analyse the WTO Agreement which disciplines international trade in goods. It is the General Agreement on Tariffs and Trade (GATT) and I will specifically investigate the relation that the utilization of article XX and the imposition of a carbon tax may have with the scope of the Paris Agreement. Secondly, I will discuss the theme of technology transfer. This discipline is governed by the Trade-Related aspects of Intellectual Property Rights Agreement (TRIPS) and I will look at the provisions which may relate with the Agreement. Thirdly, I will deal with the issue of subsidies as described in the Agreement on Subsidies and Countervailing measures. Particularly, I will discuss subsidies on fossil fuels and to renewable energies. Consequently, I will discuss the two market-based approaches included in the Paris Agreement and investigate their relationship with the treaties of the WTO. Finally, I will analyse the issue of interpretations between MEAs and the WTO and examine how new free-trade agreements may foster the implementation of the NDCs decided under the Paris Agreement. I will try to integrate case law deriving from the Dispute Settlement Body (DSB) of the WTO where appropriate and examine issues of discrimination between developed and developing countries.

[152] Christopher Tran, 'Using GATT, Art XX to justify climate change measures in claims under the WTO Agreements' (2010) 27 Environmental and Planning Law Journal 346, 347.

3.1. Article XX GATT

WTO members can unilaterally adopt measures that conflict with WTO obligations in order to pursue legitimate policy objectives[153]. Exceptions to the obligations deriving from WTO membership are disciplined in article XX of the GATT[154]. As explained by the Appellate Body in the *United States – Import Prohibition of Certain Shrimp and Shrimp Products (US – Shrimp)* case, any measure inconsistent with WTO obligations justified by article XX must overcome the two-tier analysis contained in mentioned article[155]. The first part of the analysis consists in the satisfaction of at least one of the exceptions contained in article XX. The only two provisions that can be adopted to satisfy environmental protection are paragraphs (b) and (g) and they pertain to measures that are:

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

(g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption[156].

The second part of the analysis consists in the satisfaction of the "*introductory clause of article XX"*, also known as chapeau[157]. What the chapeau states is that measures enforced under the exceptions should not constitute unjustifiable *discrimination* in countries where the *same conditions prevail*[158] or constitute a disguised *restriction on international trade.* Authors have debated that article XX can be implied in order to undertake environmental measures that clash with international trade[159]. It might, perhaps, be used to justify measures unilaterally adopted towards the implementation of NDCs. However, the preamble already poses three limitations to the application of article XX which I will discuss below in this section.

I will first analyse paragraph (g) and later paragraph (b), then I will discuss the limitations contained in the chapeau in the following order. I will first analyse the issue of discrimination between countries, then I will discuss what is meant by "same conditions" and I finally will deal with the notion of restriction on international trade.

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[153] Bhupinder S. Chimni, 'WTO and environment: Shrimp-turtle and EC-hormones cases' (2000) 35 Economic and Political Weekly 1752, 1752.
[154] GATT 1994: General Agreement on Tariffs and Trade 1994, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 U.N.T.S. 187, 33 I.L.M. 1153 (1994) [hereinafter GATT], article XX.
[155] United States – Import Prohibition of Certain Shrimp and Shrimp Products, WTO Doc WT/DS58/AB/R, AB-1998-4 (Report of the Appellate Body, 1998) at [118]-[119] [hereinafter *US – Shrimp*].
[156] GATT, *supra* note 154.
[157] *US – Shrimp*, *supra* note 155.
[158] GATT, *supra* note 154.
[159] Tamiotti et al, *supra* note 150, 106.

3.1.1. Paragraph (g)

WTO jurisprudence has highlighted three requirements that any policy measure that contravene WTO obligations must satisfy in order to fall into the scope of paragraph (g) of article XX. The requirements prescribe that such measures must "*relate to"* the conservation of *"exhaustible natural resources"* and must be *"made effective"* with domestically applied restrictions[160]. WTO case law has enlarged the interpretation of *"relate to"*. In fact, from a definition of *"primarily aimed at"* adopted by past GATT panels[161], it is now accepted that measures should be *"reasonably related to the ends"*[162] as much as to have a *"substantial relationship"*[163] with the conservation of exhaustible resources. As far as the conservation of *"exhaustible natural resources"* is concerned, WTO case law have interpreted these resources in such a very inclusive way that the panel in the *US- Gasoline* case accepted *"clean air"* to be an exhaustible resource [164], while the panel in the *Canada – Herring and Salmon* case added living animals into the list[165]. Furthermore, the Appellate Body in the *US-Shrimp* case acknowledged that the term has an *"evolutionary"* connotation because *"international conventions and declarations make frequent references to natural resources"* and therefore, they must be interpreted *"in light of contemporary concerns of the community of nations about the protection and conservation of the environment"*[166]. Finally, a measure *"made effective"* with domestic restrictions has been interpreted along with a requirement of *"even-handedness"*[167] in the application of the measure for both domestic and foreign, production and consumption[168].

Thanks to such a broad definition of the scope of paragraph (g) in article XX, it is likely that climate change mitigation measures adopted by Paris Agreement Parties' NDCs and conflicting with international obligations to trade, will be justified. In fact, as long as these measures are applied equally to both domestic and foreign products, they evidently *"relate to the conservation of natural resources"*, given the extensive interpretation of the terms provided by WTO case law. The main objective of the Paris Agreement is to reduce GHG emissions and therefore preserve Earth's climate from the worst consequences of climate

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[160] Tran, *supra* note 152, 350.
[161] Ibid.
[162] *US – Shrimp, supra* note 155, [141].
[163] United States – Standards for Reformulated and Conventional Gasoline, WTO Doc WT/DS2/AB/R, AB-1996-1 (Report of the Appellate Body, 1996) 19, [hereinafter *US – Gasoline*].
[164] *US – Gasoline*, WTO Doc WT/DS2/R (Report of the Panel, 1996) at [6.37].
[165] Canada – Measures Affecting Exports of Unprocessed Herring and Salmon, GATT Doc L/6268-35S/98 (Report by the Panel adopted 22 March 1988) at [4.6], [hereinafter *Canada – Herring and Salmon*].
[166] *US – Shrimp, supra* note 155, [129]-[130].
[167] US – Gasoline, *supra* note 163, 21.
[168] Tran, *supra* note 152, 350.

change. So, WTO members can justify measures combating emissions as an attempt to protect "clean air"[169] and even the Earth's climate or, similarly to the *Canada – Herring and Salmon* case[170], protect plant and animal species that may be endangered as a consequence of climate change. Furthermore, the Paris Agreement made a reference to natural resources, so it has enlarged the scope of paragraph (g) even more thanks to the evolutionary connotation of this term[171]. Accordingly, it has to be interpreted substantially in light of the Paris Agreement as the community of nations has given a new sense to the protection of the environment[172]. Finally, measures aiming at climate change mitigation can have effects beyond national borders and they can still fall under paragraph (g). In fact, the atmosphere or the Earth's climate are global commons, therefore the duty to protect them falls back on to all the relevant actors[173]. The principle of extraterritoriality in the context of paragraph (b) was accepted by the Appellate Body in the *US – Shrimp* case, regarding a policy measure that was not only limited to the protection of turtles in the US' national waters but also to turtles living beyond the US jurisdiction[174].

3.1.2. Paragraph (b)

Article XX, paragraph (b) consists of two requirements[175]: *"protect human, animal or plant life or health"* and "*necessary"*[176]. In order to satisfy the first requirement, it is sufficient to justify that the measure actively promotes protection for the mentioned categories[177]. As far as necessity is concerned, the Appellate Body in the *Korea – Measures affecting Imports of Fresh, Chilled and Frozen Beef* case stated that it would adopt a "weighing and balancing" approach[178]. Thus, as explained by Tran, the Appellate Body would weigh the environmental contribution that the measure brings about and balances it with the impacts that the measure has on international trade and then search for less trade restrictive alternatives[179]. WTO case law has provided guidance and criteria for this approach. In fact, it Appellate Body ruled that the more important

[169] *US – Gasoline, supra* note 163, 14.
[170] *Canada – Herring and Salmon, supra* note 165.
[171] Tran, *supra* note 152, 350.
[172] *US – Shrimp, supra* note 155, [129]-[130].
[173] Tamiotti et al, supra note 150, 108.
174 US – Shrimp, supra note 155, [133].
[175] Tran, *supra* note 152, 351.
[176] GATT, *supra* note 154, article XX, paragraph (b).
[177] Brazil – Measures Affecting Imports of Retreaded Tyres, WTO Doc WT/DS332/AB/R, AB-2007-4 (Report of the Appellate Body, 2007) at [134], [hereinafter *Brazil – Retreaded Tyres*].
[178] Korea – Measures Affecting Imports of Fresh, Chilled and Frozen Beef, WTO Doc WT/DS161/AB/R, WT/DS169/AB/R, AB-2000-8 (Report of the Appellate Body, 2000) at [164].
[179] Tran, *supra* note 152, 351.

the goal, the easier it will to recognize the necessity requirement from the measure adopted[180]. Moreover, it also affirmed, in the *Brazil – Retreated Tyres* case, that contributions relating to climate change can be only estimated *"with the benefit of time"*[181], therefore the effects of material contributions might also not be immediate but delayed into the future. Furthermore, the Appellate Body in the *EC – Asbestos* case added that when looking for less trade restrictive alternatives to a Member State's measure, the same level of protection must be maintained[182]. Therefore, alternatives will be regarded as complementary measures many times, especially when mentioned measure combat goals of the highest importance.

By applying article XX, paragraph (b) to measures taken in NDCs, it is possible to understand that many of the actions undertaken by the Parties to the Parties Agreement may be justified. In fact, NDCs try to combat climate change which is most important problems for humanity and the Planet according to the preamble to the Paris Decision*" Recognizing that climate change represents an urgent and potentially irreversible threat to human societies and the planet "*[183]. So, NDCs protect human, animal and plant life, but also protect the Earth. In this respect, the Appellate Body in the *EC – Asbestos* case found that the protection of human life and health are goals of the highest degree[184], but in the *Brazil – Retreated Tyres* case it identified that protection of the environment[185] is *"no less important"*[186]. Additionally, contributions to climate change have already been decreed that can only be estimated in long-term period of time[187]. Finally, NDCs might not be substituted by less international trade restrictive alternatives because climate change requires measures that are comprehensive in scope and methods[188].

3.1.3. Discrimination

The non-discrimination principle is a fundamental characteristic of the WTO system. In fact, it is addressed in article I, paragraph 1 of the GATT as the principle of the *Most-Favoured-Nation*[189]. According to which WTO members granting any favour to "like" products originating from another WTO member shall grant the same favour to all others trading partners. Therefore, WTO members shall not discriminate

[180] European Communities – Measures Affecting Asbestos and Asbestos-Containing Products, WTO Doc WT/DS135/AB/R, AB-2000-11 (Report of the Appellate Body, 2000) at [172], [hereinafter *EC – Asbestos*].
[181] *Brazil – Retreated Tyres, supra* note 177, [151].
[182] *EC – Asbestos, supra* note 180.
[183] Paris Decision, *supra* note 29.
[184] *EC – Asbestos, supra* note 180.
[185] Tran, *supra* note 152, 352.
[186] *Brazil – Retreated Tyres, supra* note 177, [108].
[187] Ibid. [151].
[188] Ibid.
[189] GATT, *supra* note 154, article I, paragraph 1.

between foreign "like" products and shall unconditionally grant the *most-favoured-nation* status to any other member. On the other hand, the *national treatment*, is codified in article III, paragraphs 2 and 4 of the GATT. According to the article, any tax or charge applied to imported "like" products shall be equally applied to domestic "like" products[190], moreover laws and regulation accorded to domestic "like" products shall be also accorded to domestic "like" products. Thus, a member state shall not discriminate between domestic products and its own domestic products.

Issues of discrimination among member countries or between domestic and foreign "like" products have been the cause for the failure of cases involving the exceptions contained in the paragraphs of article XX. In fact, in the *Brazil – Retreated Tyres* case it was found that Brazil had discriminated between imports originating from MERCOSUR countries and other WTO members[191], while in the *US – Gasoline* case, the Appellate Body acknowledged that the US indirectly discriminated between their own and foreign gasoline[192].

In the next paragraph I will discuss the term "likeness" between products. In fact, it is of the utmost importance to understand what the concept of "likeness" between goods is and how it relates to environmental policies.

3.1.3.1. Likeness

The concept of likeness was not described in the GATT, so WTO panels and Appellate Bodies developed an approach in order to determine the degree of likeness between products. Paragraph 18 of the 1970 *Working Party on Border Tax Adjustments*[193] suggested some criteria to define likeness between products that were later utilized by the Appellate Body in the *EC – Asbestos* case. The Appellate Body developed four "characteristic" to investigate if products are like and they are *"(i) the properties, nature and quality of the products; (ii) the end-uses of the products; (iii) consumers' tastes and habits in respect of the products; and (iv) the tariff classification of the products"*[194]. Even thought the Appellate Body has provided

[190] Ibid. III.2.
[191] *Brazil – Retreated Tyres, supra* note 177.
[192] *US – Gasoline, supra* note 163.
[193] General Agreement on Tariffs and Trade, Report by the Working Party on Border Tax Adjustments, GATT Doc L/3464, (Nov. 20, 1970), paragraph 18, [hereinafter Working Party 1970].
[194] *EC – Asbestos, supra* note 180, [101].

guidance, it expressively declared in the *Japan – Alcoholic Beverages II* case that judgements of likeness will be made on a case-by-case basis[195].

Relevant to an environmental discussion is to understand if it is possible to discriminate between products according to their different process and production methods (PPMs). Therefore, can it be sustained that PPMs makes two products "unlike"? In fact, the methods according to which products are manufactured are responsible for pollution and not (often times) the final product in itself. This was precisely the question put forward during the *Tuna – Dolphin I* case[196]. In fact, the Panel uphold that different PPMs do not influence the characteristics of a final product, therefore two products cannot be claimed to be unlike based on their different PPMs[197].

This limits WTO members policies in relation to climate change mitigation measures. NDCs that promote cleaner PPMs and discriminate others would be likely deemed as illegal. PPMs standards, referred to as technical regulations under the Technical Barriers to Trade Agreement (TBT), are permitted if they apply to both domestic and imported products so that imports are not at a comparative disadvantage in relation to domestic like products[198]. However, technical regulations should not be more trade-restrictive than necessary and according to the definition of likeness given above they could be deemed as trade-restrictive[199]. Even more controversial is the notion of embodied carbon footprint. In fact, it is even more distantly related to the physical characteristic that makes product alike. Actually, two products may adopt two similar PPMs, but one would have a larger carbon footprint because during its production process a high emitting fuel was utilized. Therefore, embodied carbon does not alter the final product neither its PPMs but it is embodied into the final product and it is called non-product-related PPM (npr PPMs) characteristic. Therefore, discrimination based on npr PPMs would also be deemed as discriminatory and so prohibited.

[195] Japan - Taxes on Alcoholic Beverages, WTO Doc WT/DS8/AB/R, WT/DS10/AB/R, WT/DS11/AB/R, AB-1996-2 (Report of the Appellate Body 1996), 21.
[196] United States – GATT Dispute Panel Report on Restrictions on Imports of Tuna, Sept. 3, 1991, GATT B.I.S.D. (39th Supp.) at [155] (1993) [hereinafter *Tuna-Dolphin I*].
[197] Ibid. [5.14], [5.15]-[5.16].
[198] Agreement on Technical Barriers to Trade, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1868 U.N.T.S. 120, article 2, paragraph 5, [hereinafter TBT Agreement].
[199] Susanne Droege et al, *'The Trade System and Climate Action: Ways forward under the Paris Agreement'* (2016) 13 SCJ Int'l L. & Bus. 195.

3.1.4. Same Conditions

The chapeau to article XX mandates that the exception contained in the paragraphs shall not be used in a discriminatory method in countries where the same conditions prevail[200]. The notion of same conditions may refer to economic, social and technological development. So, it is recognized that WTO members follow different paths towards economic development and they do so differently from one another. However, it would not constitute discrimination to treat differently, under the exceptions provided by article XX, like products coming from members where the same conditions do not prevail. Providing that article XX is an exception to the obligations derived by membership to the WTO, including the most-favoured-nation treatment, it is hoped that regarding environmental measures, this differentiation does not justify unfair discrimination. Perhaps, carbon or emission trading system coalitions could discriminate among WTO members that do not implement the same measure[201]. Furthermore, Parties to the Paris Agreement might also discriminate on the basis of the implementation of NCDs or even upon the efficacy of countries' NCDs. Harris has found out that China's commitment is not adequate to its role of largest emitter globally[202], therefore, according to this view, Parties could retaliate economically retaliate against China. However, caution should be used when unilaterally addressing other Parties' NCDs. In fact, it possible to understand the connection with the principle of common but differentiated responsibilities described in the first chapter. One of the implications of this principle is that countries should contribute to climate change differently in connection with their past responsibilities and present capabilities. In fact, by excluding imports or treating them differently because of different circumstances in the country of origin could lead to a technological discrimination. For example, some developed WTO members might raise their environmental standards in such a way that could be to expensive to comply for other members. This situation might lead to even stronger inequalities in respect to economic development as exporting industries would be preventing from selling to some WTO members, thus losing some of their profitability. One way that the dispute settlement mechanism implied in order to assess consequences of an environmental measure adopted under article XX is to analyse the impacts on the affected industries. It was noted in *Tuna – Dolphin I* that the Mexican tuna industry had lost suffered heavy economic loss resulting from the unilateral ban imposed by the United States[203].

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[200] GATT, *supra* note 154, article XX.
[201] Droege et al, *supra* note 199.
[202] Paul G Harris, *'China's Paris pledge on climate change: inadequate and irresponsible'* (2017) 7.1 Journal of Environmental Studies and Sciences 102, 102.
[203] Droege et al, *supra* note 199.

3.1.5. Restriction on International Trade

Environmental measures relieving from obligations under the WTO shall not be adopted in a way that would result in an unjustified restriction on international trade. In fact, as described in the above paragraph regarding same conditions environmental measures shall always be adopted considering the impacts they have on international trade. Moreover, they shall not be implemented as a justification to advantage domestic industries, thus derogating from WTO obligations. According to the relevant case law, WTO panels and Appellate Bodies always try to find a less trade-restrictive alternative to the measures applied. Therefore, the Appellate Body in the *US – Gasoline* case found that the US could have entered in cooperation arrangements with affected country and this measure would have had a less marked impact on international trade[204]. Moreover, in the *US – Shrimp* case, the Appellate Body found that the licence to export shrimps in the USA as a condition of the adoption of the same regulatory programme imposed by the US was a measure that represented a substantial restriction on international trade.

3.2. Carbon Tax

A carbon tax is one of the possible methods that a country can introduce in order to reduce national GHGs emissions. In fact, its main objective is to internalize the external costs related to the combustion of fossil fuels by putting a price on the amount of CO_2 that mentioned combustion releases into the atmosphere. The carbon tax works by taxing the amount of CO_2 produced during the combustion process of different energy sources utilized for the production of goods. Therefore, higher-emitting fossil fuels will be taxed more than lower-emitting fossil fuels, whereas energy derived from renewable sources will not be taxed[205]. Consequently, the tax has two effects. On the one hand it directly encourages a fuel switch and on the other it indirectly calls for investments in low emitting production processes[206]. A carbon tax is already implemented in many countries for example Finland, Norway or South Africa and many more have stated their willingness of implementing it in their NDCs[207]. The scope of a carbon tax is expressively justified by the Paris Agreement mainly because of its insistence on climate change mitigation and adaptation[208]. In fact, reduction of GHG emissions is stated in the Preamble of the Decision adopting the Paris Agreement[209].

[204] Tamiotti et al, *supra* note 150, 109.
[205] Tamiotti et al, *supra* note 150, 90.
[206] Ibid. 95.
[207] World Bank, Ecofys and Vivid Economics, *'State and Trends of Carbon Pricing 2017'* (2017), 22.
[208] Montini, *supra* note 1, 735.
[209] Paris Decision, *supra* note 29.

Moreover, article 2 of the Agreement directly encourages an increasing development toward low GHG emissions rightly after stating the purpose of 2 °C limit in the increase in global average temperature[210]. Furthermore, the main reason behind the creation of NDCs is the abatement of CO_2 emission[211]. So, not only the imposition of a carbon tax is justified by the Paris Agreement, it is also encouraged as an effective way to cut national GHGs emissions.

The imposition of a carbon tax is totally in line with the environmental purposes of the Paris Agreement, however the consequences that it could bring about may conflict with provisions relating with WTO treaties.

3.2.1. Border Carbon Adjustment

The implementation of a carbon tax obviously causes raising costs of production for goods. In fact, they are now taxed for the amount of CO_2 released in the atmosphere during their production process. In recent years, trade in goods has become ever more international[212] and in an international trade environment higher costs of production may have two important consequences for the country implementing the carbon tax. The first one is that domestic firms might want to relocate production in countries that do not impose such taxation in order to maintain low costs of production. The second consequence is that foreign goods imported in the country with the carbon tax are at a comparative advantage in relation to domestic products, because they are not subject to climate taxes in their domestic jurisdiction. Consequently, they benefit from lower production costs compared to those in the country imposing such taxation. As a result, their price might end being lower than those of the products produced in the carbon taxing country[213]. So, even if the carbon tax is recommended under purely environmental reasons, it brings some undesired economic consequences that deserve to be analysed and to which countries may want to react. The circumstances described above have two direct consequences: loss of competitivity by firms of the country imposing the carbon tax and loss of jobs as a result of cheaper imported products and relocation of domestic firms in foreign jurisdictions. Moreover, relocation to avoid a carbon tax to countries with less environmentally friendly legislation may result in a so called “carbon leakage”. Carbon leakage is described as the increase in carbon emissions in a foreign jurisdiction as a direct result of stricter environmental regulation in domestic

[210] Paris Agreement, *supra* note 7, article 2, letter (b).
[211] Ibid. 4.
[212] WTO has 164 members <https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm> accessed 05 May 2018.
[213] Tamiotti et al, supra note 150, 99.

jurisdiction[214], therefore countries may want to avoid it since it undermines the environmental rationale of reducing emissions behind such carbon taxation.

In order to avoid carbon leakages, competitivity loss and unemployment, countries imposing a carbon tax may also want to impose border tax adjustments (BTAs). The definition of BTAs can be found in the 1970 report of the GATT *Working Party on Border Tax Adjustments* which referred to a definition applied in the OECD. Specifically, paragraph 4 reads *"as any fiscal measures which put into effect, in whole or in part, the destination principle (i.e. which enable exported products to be relieved of some or all of the tax charged in the exporting country in respect of similar domestic products sold to consumers on the home market and which enable imported products sold to consumers to be charged with some or all of the tax charged in the importing country in respect of similar domestic products)"*[215]. A BTA in relation to carbon emissions is defined by scholars as border carbon adjustment (BCA) as it the result of particular taxation posed on the carbon content of products[216]. At the time of writing (April 2018) there has been no implementation of any BCA in the world[217]. So, a BCA works in two ways according to the destination principle and it can therefore be applied to both imports and exports. A BCA on imports consists of a tax imposed "at the border" to imported products, equivalent to an internal taxation on domestic products, whereas a BCA on exports consists in the refunding of taxes when the product is sold in foreign markets[218]. So, a BCA works as a mechanism which tries to balance competition between domestic producers facing a carbon tax and foreign firms exempted from this tax in their domestic jurisdiction[219].

3.2.1.1. BCA on Imports and Exports

The article that governs the imposition of a BTA on imports is article II of the GATT[220]. Specifically, paragraph 2, letter (a) of mentioned article allows members of the WTO to impose a charge on imports equivalent to an internal tax imposed on like domestic products as long as consistent with the principle of the national treatment contained in article III, paragraph 2. In fact, BTA is different from a custom duty[221]. The latter is imposed on imported goods, whereas the former is an adjustment of the taxes imposed domestically

[214] Aaron Cosbey, *'A Guide for the Concerned: Guidance on the Elaboration and Implementation of Border Carbon Adjustment'* (2012) Entwined Policy Report 03, 8.
[215] *Working Party 1970*, *supra* note 193, paragraph 4.
[216] Cosbey, *supra* note 214; Droege et al, *supra* note 199; Granoff, *supra* note 147.
[217] Tamiotti et al, supra note 150, 101.
[218] Ibid. 100.
[219] Granoff, *supra* note 147, 7.
[220] GATT, *supra* note 154, article II.
[221] Ibid. I.1.

when foreign goods are imported. Moreover, the principle of the national treatment is included in this article in order to remark that discrimination shall not take place through the imposition of BTAs, thus the obligation of equivalence between internal taxes and the charges. Relevant to the analysis of BCA are to phrases contained in article II and III of the GATT. The first one states that a BTA shall be imposed "*in respect of the like domestic product or in respect of an article from which the imported product has been manufactured or produced in whole or in part"*[222], while the second phrase regards taxes *"applied, directly or indirectly, to like domestic products"*[223]. In fact, article II justifies the imposition of BTAs for goods that are like domestic products and for articles from which the imported product has been manufactured or produced totally or partially[224]. Recalling the discussion undertaken in the section regarding the concept of "likeness" between goods[225], it was noticed that discrimination of products based on their carbon content was controversial since there was no trace of CO_2 emissions in the final product. This relates to the question of whether the embodied carbon of a product is an eligible adjustment charge when the final product is imported in a carbon taxing member[226]. Even when implying that the final product has been manufactured in whole or in part with inputs that are taxed for CO_2 emissions, however the final product does not contain any trace of the CO_2 that was used during its production process. Therefore, such tax would be a taxation on the inputs used in the PPM of a final product. However, in the *Superfund* case the Panel uphold that inputs that are physically incorporated in the final product are eligible for BTA, because they have been manufactured at least in some parts[227]. Therefore, a BCA on oil products such as plastic would be totally in line with the explication given by the *Superfund* case. However, a BCA on a product that used oil during its production process is more controversial because that oil is not part of the physical final product.

A BTA can be applied to exports as well following the destination principle[228]. In this case the BTA rebates the taxes that have imposed on products that are destined to foreign consumption. According to article VI, paragraph 4 of GATT, a BTA on exports cannot be subject to anti-dumping duties or countervailing measures[229]. Moreover, the note to article XVI in the Annex I of the GATT and footnote 1 of

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[222] Ibid. II.
[223] Ibid. III.
[224] Tamiotti et al, *supra* note 150, 106.
[225] See above page 29.
[226] Tamiotti et al, *supra* note 150, 104.
[227] Chris Wold, *'Multilateral environmental agreements and the GATT: conflict and resolution?'* (1996) 26 Environmental Law 841, 908.
[228] *Working Party 1970*, *supra* note 193, paragraph 4.
[229] GATT, *supra* note 154, article VI, paragraph 4.

the SCM agreement[230], justify BTAs as methods of rebating taxation that do not constitute subsidies[231]. However, a BTAs on export must not exceed the level of taxation imposed, otherwise they would be regarded as subsidies under article XVI of the GATT[232] and article I of the SCM[233]. As far as a BCA is concerned, it was argued that a carbon tax would constitute a "tax occult"[234]. In fact, the *Working Party 1970* defined them as taxes on *"auxiliary materials and services used in the…production of other taxable goods"*[235]. As described above, a carbon tax is imposed on the amount of CO_2 produced by energy sources during the production stage. It perfectly fits into the definition of tax occult, since fuel is an auxiliary material used in the production process. Furthermore, the *Working Party 1970* explicitly states that taxes on energy were included into the list of "taxes occultes"[236]. After this analysis, the *Working Party 1970* found that there was no agreement among Parties on whether such taxes occultes were eligible for a border adjustment[237].

Finally, the issue of BCA remains controversial in both cases imports and exports and only a judicial pronouncement at the WTO level might be able to give some guidance and clarify the matter.

3.2.2. Discrimination

As for derogation of WTO obligations, a carbon tax can result in unjustifiable discrimination as well. When dealing with matters involving international trade and the environment, WTO members and Parties to the Paris Agreement should always keep in mind that countries undertake different paths towards economic and technological development. Moreover, they should execute their respective missions in light of the principle of sustainable development, which is a shared goal to both international regimes[238]. For example, WTO members, likely developed countries, implementing a carbon tax might exempt other countries that undertake similar policies from the duties of a BCA and impose it to those countries that do not implement any carbon taxation. This would be a derogation of the principle of the most-favoured-nation permitted by

[230] Agreement on Subsidies and Countervailing Measures art. 1, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1869 U.N.T.S. 14 [hereinafter SCM Agreement], footnote 1; GATT, *supra* note 154, Annex I, note article XVI.
[231] GATT, *supra* note 154, Annex I, note article XVI.
[232] GATT, *supra* note 154, article XVI.
[233] SCM Agreement, *supra* note 230, article 1.
[234] Tamiotti et al, supra note 150, 105.
[235] *Working Party 1970*, *supra* note 193, paragraph 15.
[236] Ibid.
[237] Ibid.
[238] WTO Agreement: Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 1867 U.N.T.S. 154, 33 I.L.M. 1144 (1994), Preamble; Paris Decision, *supra* note 29, Preamble.

article XX[239]. However, as a BCA would be imposed by developed countries on developing ones and this behaviour is likely to be regarded as discriminatory [240]. In fact, technological development, in regard to emission abating systems, is unequal and it is difficult for many developing countries to accede to new green technologies. So, developing countries should implement cleaner policies in order to trade with developed countries, but the technology that would allow them to pursue those policies is held by developed countries. The latter are the same countries that imposed the BCA that may bring bad economic consequences as it would restrict export volumes. Moreover, according to the principle of carbon space, developing countries benefit from more time regarding the achievement of their carbon peak, while developed countries shall start reducing their emissions as soon as possible. So, a policy that deny carbon space to developing countries actually prevents them from developing economically. Additionally, it is difficult to assess all the variables when designing a BCA[241]. Perhaps, a country might be investing in renewable energy that may have the same results of the imposition of a BCA, under a purely economic point of view. However, it would be difficult for a BCA to assess the impacts of other policies on carbon reductions, therefore a BCA on environmentally friendly countries would constitute an unnecessary obstacle to trade between members that have the similar environmental standards. Finally, WTO member can unilaterally adopt fuel efficiency standards or standards on the carbon footprint of final products, according to the TBT agreement[242]. However, these types of standards require a technological development not yet achieved by many developing countries. Standards represent technical barriers to trade because as a result imports not meeting certain standards would be prevented from selling in the importing regulating country. Nonetheless, developing countries should rely on international trade in order to develop economically and also acquire new technologies and any technical barrier is likely to hinder international trade.

The issue of technological development is fundamental when analysing discrimination and I will discuss the issue of technology transfer in the next section of the chapter.

[239] Cosbey, *supra* note 214, 10.
[240] World Bank, Ecofys and Vivid Economics, *supra* note 207.
[241] Cosbey, *supra* note 214, 11.
[242] Clara Brandi, *'Trade elements in countries' climate contributions under the Paris Agreement'* (2017) Geneva: International Centre for Trade and Sustainable Development <www.ictsd.org/sites/default/files/research/trade_elements_in_countries_climate_contributions.pdf> accessed 05 May 2018, page 6.

3.3. Technology Transfer

According to the data, 90% of environmental goods and services industries are located in OECD countries[243]. This skewed dissemination of knowledge can be diverted thanks to what is called technology transfer. For this section I will refer to technology transfer according to the definition given by the Intergovernmental Panel on Climate Change (IPCC): *"the broad set of processes covering the flows of know-how, experience and equipment and is the result of many day-to-day decisions of the different stakeholders involved"*[244]. This definition also includes the participation of private enterprises along with national governments, as they are key drivers of technological development and research. In fact, private enterprises and inventors alike are encouraged to innovate thanks to the patent system. In fact, the patent system works in a way that an innovator discloses its invention to the public in exchange to the right to exclude others from using the invention for a limited period of time, generally 20 years.[245] According to classical economic theory, private enterprises and inventors are attracted by the possibility of imposing monopoly prices and therefore increase profitability. This bargain is intended as a compensation for all the resources invested in the pursuit of innovation[246]. When applying this discussion to global warming it was noticed above that the great majority of environmentally sound technologies (EST) is held by developed countries. Moreover, they were among the first to adopt climate mitigation regulations, thus incentivizing research in clean technologies because of higher return on investment. As a result the already skewed distribution of know-how may eventually become even more unequal as develop countries encourage private enterprises to innovate in order to adapt to stricter environmentally regulations[247]. However, climate change is an issue that deserves immediate action and therefore the Paris Agreement reinstated the role of technology transfer in the field of mitigation[248].

Technology transfer from developed to developing countries is a key issue to achieve the global climate change mitigation outcome expressed in the Paris Agreement[249]. The Parties have acknowledged the importance of the matter and as a result 63% of all NDCs make their total or partial accomplishment

[243] Tamiotti et al, *supra* note 150, 61.
[244] Bert Metz and John K. Turkson, *Methodological and technological issues in technology transfer: a special report of the intergovernmental panel on climate change* (Cambridge University Press, 2000), 5.
[245] Gregory N. Mandel, *'Promoting Environmental Innovation with Intellectual Property Innovation: A New Basis for Patent Rewards'* (2005) 24 Temple Journal of Science Technology and Environmental Law 51, 51.
[246] Ibid.
[247] Tamiotti et al, *supra* note 150, 61.
[248] Paris Agreement, *supra* note 7, article 10.
[249] Ibid. 2.1 (a).

conditional on technology transfer from developed countries[250]. In fact, dissemination of knowledge from developed countries to developing ones facilitate and accelerates emission reductions and may realize the objectives stated in the Paris Agreements[251]. However, distribution of knowledge in the context of international trade must be justified by WTO Agreements. The treaty that governs Intellectual Property Rights (IPRs) is the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement)[252]. The TRIPS Agreement already in its Preamble provides justification to technology transfer with respect to climate change mitigation. In fact, Parties recognize *"the underlying public policy objectives of national systems for the protection of intellectual property, including developmental and technological objectives"* and *"the special needs of the least-developed country Members in respect of maximum flexibility in the domestic implementation of laws and regulations in order to enable them to create a sound and viable technological base"*[253].The TRIPS Agreement provides two possible ways to address the climate change issue through IPRS. The first one is to refuse patents for environmentally damaging innovations, while the other is to grant compulsory licensing for ETS. I will discuss the two matters according to the order delineated above.

3.3.1. Prohibiting Patents

It is already possible to see in the preamble to the TRIPS Agreement that countries can shape intellectual property rights in order to pursue public policy objectives. Additionally, article 7 states that the enforcement of IPRs should contribute to higher levels of social and economic welfare. So, even if countries have to grant patents for *"any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application"*[254], however article 27, paragraph 2, draws some limits. In fact, *"Members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect "ordre public" or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited*

[250] Brandi, *supra* note 242, 16.
[251] Droege et al, *supra* note 199.
[252] TRIPS: Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994), [hereinafter TRIPS Agreement].
[253] TRIPS Agreement, *supra* note 252, Preamble.
[254] Ibid. 27.1.

by their law"[255]. Therefore, it is possible that countries may use article 27, paragraph 2 in order to exclude patentability of inventions that harm human, animal and plant life health and or harm the environment. Global warming undoubtedly constitutes a harm to the environment, but it is also dangerous for plants and animals because their habitats are likely to change. Importantly, it is also harmful to humans who will face lower food availability, direct consequences on their health and rising sea levels will displace millions of people[256]. Therefore, it is reasonable that countries might invoke this article to not increase their impact on the environment with commercialization of new inventions. It is possible to recognize a similarity between article 27, paragraph 2 and article XX, paragraph (b) of the GATT. They are both exceptions *"necessary"* to protect *"human, animal or plant life or health"*[257], so, it is possible to have a "cross-reference" between the two provisions and interpret article 27, paragraph 2 in line with article XX, paragraph (b). Even thought, they address two different regimes: international trade the GATT, IPRs the TRIPS, past cases involving the TRIPS Agreement, made clear that TRIPS should be interpreted with guidance from the GATT[258]. However, Tran maintains doubts about the possibility of interpreting article 27, paragraph 2 as broadly as article XX, paragraph (g)[259]. In fact, as explained above[260], WTO jurisprudence have broadly interpreted paragraph (b), but since article 27, paragraph 2 lacks a chapeau that defines its scope it should be interpreted more restrictively[261].

Member countries establish how to apply prohibition of patents into their own IPRs systems. National offices can outright refuse to license any invention that emits CO_2 or, more likely, they can indulge in a cost-benefits analysis. They may consider the value added by the new invention to the society and compare it with the levels of CO_2 emitted[262]. The latter alternative is to be preferred because of the relevant repercussion it would have on technological development and because of the narrow interpretation on the exclusion of patents under the circumstances described in article 27, paragraph 2.

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[255] Ibid. 27.2.

[256] IPCC, Osvaldo Canziani et al., *'Summary for Policymakers. In: Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change'* (2007) Cambridge University Press 7, 12.

[257] GATT, *supra* note 154, article XX; TRIPS Agreement, *supra* note 252, article 27, paragraph 2.

[258] Tran, *supra* note 152, 354.

[259] Ibid.

[260] See above page 27.

[261] Tran, *supra* note 152, 354.

[262] Estelle Derclaye, *'Intellectual property rights and global warming'* (2008) 12 Marquette Intellectual Property Law Review 263, 273.

3.3.2. Compulsory Licensing

The preamble to the TRIPS Agreement acknowledges that the least-developed country members need maximum flexibility for the domestic implementation of laws in order for them to develop a viable technological base[263]. Furthermore, article 8 paragraph 2 recognizes that appropriate measures "*may be needed to prevent the abuse of intellectual property rights by right holders or the resort to practices which unreasonably restrain trade or adversely affect the international transfer of technology"*[264]. So, article 8 recognizes that patents should be used for the benefit of the society and that sometimes there might be a clash between the interests of the society and the interest of the patent holder, therefore members might resort to compulsory licensing in order to correct the problem. Compulsory licensing is the use of the patent without authorization of the patent holder. Unauthorized use of patents is disciplined by article 31 of the TRIPS Agreement, which also provides the conditions for such unauthorized use[265]. Article 31 does not specifically deal with global warming, but it can be interpreted in order to address this issue as well thanks to the authority of article 8. Two paragraphs are at the centre of the discussion on global warming and compulsory licensing and they are paragraphs (b) and 1 of article 31. The first one allows members to grant licences if the patent holder has not worked the invention[266]. However, compulsory licensing is subject to conditions. In fact, the proposed user must have asked to work the invention on reasonable conditions and for a reasonable period of time[267]. However, the latter requirement can be waived in circumstances of national emergencies and extreme urgency or for public non-commercial use of the invention[268]. Furthermore, paragraph 1 allow members to provide the license of a first patent to the holder of a second patent if (i) the second invention is a dependent patent and which involves an important technical advancement *"in relation to the invention claimed in the first patent"*[269].

So, according to the analysis carried out above, developing countries' governments might resort to compulsory licensing for eco-friendly inventions to allow their use by the state to reduce carbon emission and implement NDCs[270]. Moreover, they can waive the requirement of expiration of the patent if they claim its use on the base of national emergency according to article 31, paragraph (b). It is likely that global

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[263] TRIPS Agreement, *supra* note 252 and Metz and Turkson, *supra* note 244, 11.
[264] TRIPS Agreement, *supra* note 252, article 8, paragraph 2.
[265] Ibid. 31.
[266] Derclaye, *supra* note 262, 281.
[267] TRIPS Agreement, *supra* note 252, article 31, letter (b).
[268] Ibid.
[269] Ibid 31.1 Derclaye, *supra* note 262, 281.
[270] Derclaye, *supra* note 262, 281.

warming constitutes a national emergency scenario given the consequences it will have on animal, plants and human health or life[271]. Furthermore, article 31, paragraph 1 could be used in order to grant a license to an eco-friendly invention which is dependent on a first eco-friendly invention[272].

It looks like the international community has endorsed the idea of compulsory licensing for EST and special enthusiasm is expressed by developing countries which would be relieved from the costs of investing huge amounts of resources into research. For example, Brazil has called for a Doha Declaration on Climate Change[273], in line with the Ministerial Declaration on the TRIPS Agreement and Public Health[274]. The latter takes full advantage of the flexibilities provided in the TRIPS Agreement when dealing with public health and the same could be done in regards of climate change mitigation. Particularly, paragraph 4 states that the TRIPS Agreement should not prevent members from protecting human health and provide medicine for all and paragraph 5, letter (b) determine that countries are free to grant compulsory licensing and free to establish the basis upon which they are granted[275]. If global warming would be regarded as a danger to public health, the same requirements applied for compulsory licensing of medicines would we applied to environmental goods. So, developing countries would be enabled to use another flexible tool in order to achieve their NDCs submitted under the Paris Agreement. Furthermore, the Group of 77 has also called for compulsory licensing of ETS during UNFCC negotiations[276].

3.4. Subsidies

Subsidies are governed by the Agreement on Subsidies and Countervailing Measures. Specifically, article 1, paragraph 1 of the SCM Agreement defines governments measures as subsidies if there exist *"a financial contribution by a government or any public body within the territory of a Member…, where a benefit is conferred"*[277]. The term financial contribution consists of direct transfer of funds, government revenues that are not collected, a government providing goods or services or a third party that carry out

[271] Interpreting 'national emergency' according to TRIPS Agreement, *supra* note 252, article 27 paragraph 2.
[272] Derclaye, *supra* note 262, 281.
[273] Raymond Saner, *Greening the World Trade Organization*, (FEEM Press 2016), 54.
[274] World Trade Organization, Ministerial Declaration on the TRIPs Agreement and Public Health, T/MIN(01)/DEC/2, 41 I.L.M. 755 (2002).
[275] Ibid. paragraphs 4 and 5, letter (b).
[276] Saner, *supra* note 273.
[277] SCM Agreement, *supra* note 230, article 1 paragraph 1.

transfer of funds or provides goods and services on behalf of the government[278]. Furthermore, the measure shall be specific to target certain enterprises[279].

Firms are not encouraged to invest in climate-friendly technologies or renewable energies because they do not face the costs of polluting the atmosphere. Therefore, it is economically efficient for firms to maintain the status quo or invest provided that there is a high return on investment or an obligation to meet certain environmental standards. In order to correct this market failure, governments may resort to the use of subsidies to incentivize the shift towards a more sustainable economic model. However, subsidies also carry some unwanted consequences to international trade. In fact, they result in lower prices for products from the subsidized industry that negatively affect the rights of exporting countries in the subsidizing country. Moreover, imports from the subsidizing country would be at a comparative advantage in comparison the non-subsidized products of a domestic market[280]. These issues are addressed by article XVI of the GATT which recognizes that subsidies may cause serious prejudice to the interests of other members[281]. Because of the economic downsides that subsidies may bring about, the SCM outright prohibits subsidies which are contingent upon export performance or upon the use of domestic over imported goods[282]. Apart from these two prohibited categories there also exists a third category which is called "actionable" subsidies[283]. They are permitted by article 5 SCM as long as they do not cause *"adverse effects to the interests of other Members"*[284]. So, a subsidy granted by a government can be questioned by another government if it can demonstrate that mentioned subsidy causes a serious prejudice to its interests[285]. Furthermore, a subsidy may also cause the introduction of imports to another country at less than the normal price[286]. This action is called dumping and causes serious issues to established industries, moreover it prevents the birth of new ones. Therefore, dumped products can be subject to anti-dumping duties according to paragraph 2 of article VI of the GATT[287]. They are countervailing measures that restore the price of products to their normal value.

It is possible to see the consequences that subsidies may have on another WTO member's economy. Thus, they have been the most controversial issue in relation to WTO obligations and the environment. In

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[278] SCM Agreement, *supra* note 230, article 1, paragraph 1, letter (a) 1 (i), (ii), (iii) and (iv).
[279] Ibid. 1.2, 2.1, 2.2.
[280] Andrew Green, *'Trade rules and climate change subsidies'* (2006) 5.3 World Trade Review 377, 385.
[281] GATT, *supra* note 154, article XVI, paragraph 1.
[282] SCM Agreement, *supra* note 230, article 3.
[283] James Salzman and Mark Wu, *'The next generation of trade and environment conflicts: The rise of green industrial policy'* (2013) 108 Northwestern University Law Review 401, 423.
[284] SCM Agreement, *supra* note 230, article 5.
[285] SCM Agreement, *supra* note 230, article 6 paragraph 1.
[286] GATT, *supra* note 154, article VI, paragraph 1.
[287] Ibid. VI.2.

fact, subsidies rating to the development of renewable energies have been granted in order to have a lower impact on the environment. However, cases have been filed regarding the very same subsidies and the Dispute Settlement Body of the WTO have come across cases involving subsidies to renewable energies more and more often in the last few years.

I will analyse the topic of subsidies and the environment in two paragraphs. In the first one I will discuss subsidies relating to fossil fuels, whereas I will deal with subsidies to renewable energies in the second one.

3.4.1. Subsidies to Fossil Fuels

It is recognized that fossil fuels contribute to climate change. In fact, during their combustion process they release large amounts of CO_2 into the atmosphere. Since the advent of the Industrial Revolution CO_2 has accumulated into the atmosphere and will remain the for millennia. High concentrations of carbon dioxide are the cause of the rise in global average temperatures and to global warming. However, countries actively reinforce exploitation of these resources by subsidizing fossil fuels. It is estimated that fossil fuels subsidies total more than US dollar 500 billion per year and this figure is about four times the amount the level of support granted to the exploitation of renewable energies[288]. Indeed, fossil fuel subsidies limit the spread of EST by maintaining the price of fossil fuels artificially low[289]. Therefore, fossil fuels subsidies apart from actively contributing to climate change, they also slow down decarbonization by inhibiting the spread and development of renewable energies and eco-friendly technologies. Furthermore, the International Energy Agency has estimated that by eliminating fossil fuel subsidies worldwide, it would be possible to achieve half of the carbon emission reductions necessary to limit the increase in temperature below 2 degrees Celsius[290] and therefore accomplish the mandate of the Paris Agreement. Nevertheless, the consequences of fossil fuels subsidies are not only limited to the environment but are also related to human health. A study calculated that these damages cause a cost of 5.3 trillion USD per year[291].

The SCM Agreement apply to all types of subsidies and thus also to fossil fuel subsidies. So, theoretically, they should be prohibited if they are based on export performances or local content

[288] Matthew C. Porterfield, 'Reconciling Trade Rules and Climate Policy' in *Trade in the Balance: Reconciling Trade and Climate Policy* (Boston University Press 2016), 45.
[289] Brandi, *supra* note 242, 7.
[290] Porterfield, *supra* note 288.
[291] Brandi, *supra* note 242.

requirements (LCR)[292]. Until now, no fossil fuel subsidy has ever been challenged by a WTO member, while those relating to renewable energies or EST have been found illegal[293]. Possibly, because of the difficulties in carrying out economic analysis which prove the adverse effects they have on international trade[294].

Fossil fuel subsidies are fundamental in order to achieve the goals described in the Paris Agreement. It has already been discussed that a half reduction of carbon emissions could be achieved by eliminating fossil fuels. Moreover, they are they also incentivize the use of carbon-intensive fuels, thus delaying the shift towards more environmentally-friendly sources. For these reasons fossil fuels shall be eliminated as they are responsible of enormous amounts of GHGs emissions. Moreover, there exist a moral obligation on behalf of developed country parties which should undertake economy-wide emission reduction targets as stated by article 4, paragraph 4 of the Paris Agreement[295] and with fossil fuel subsidies is unlikely to achieve such significant reductions. According to Principle 2 of The Rio Declaration on Environment and Development (1992), states should *"ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction"*[296]. Therefore, having recognized that fossil fuels contribute to climate change, states are under obligation to stop their subsidies in order not to provoke damages to other countries. Furthermore, the same Rio Declaration entitles humans with the right of a healthy life[297]. Nonetheless, this principle is contradicted when it is found that fossil fuels cause damages to the environment and to human health as well.

3.4.2. Subsidies to Renewable Energies

Subsidies granted to the production of renewable energies mainly serve two purposes: on the one hand they attempt to reduce GHGs emissions and on the other hand they foster the development of a domestic industry able to compete in the international market[298]. For the latter reason, subsidies to renewable energies are regarded as trade distortive because they move away consumption from high-performing imports towards less efficient domestic products[299]. Therefore, they have been the subject of many trade disputes.

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[292] Droege et al, *supra* note 199.
[293] Ibid. 21.
[294] Porterfield, *supra* note 288.
[295] Paris Agreement, *supra* note 7, article 4, paragraph 4.
[296] Rio Declaration on Environment and Development, *supra* note 51, principle 2.
[297] Ibid. principle 1.
[298] Lucas Assunção and ZhongXiang Zhang, *'Domestic climate policies and the WTO'* (2004) 27.3 The World Economy 359, 362.
[299] Salzman and Wu, *supra* note 283, 421.

For instance, in 2013 the USA brought a case before the DSB of the WTO against India and its Jawaharlal Nehru National Solar Mission (NSM). As a matter of fact, the NSM prescribed a domestic content requirement (DCR) under which investors were obliged to use solar modules and 30% of all inputs from India[300]. The Panel of the case found that the DCR was a local content requirement (LCR), therefore a subsidy involving a form of discrimination between domestic over imported goods, which is expressively prohibited by article 3, paragraph 1, letter (b) of the SCM Agreement[301]. The *India – Solar Panels* case was not the first and is likely not the last case involving subsidies to renewable energies. In fact, other significant cases were *Canada — Certain Measures Affecting the Renewable Energy Generation Sector*[302] and *China — Measures Concerning Wind Power Equipment*[303]. They were both found to contravene WTO obligations as LCR fail the test of article 3 SCM[304]. Apart from being illegal under article 3 SCM[305], both developed and developing countries have recurred to LCR to subsidy their renewable energy industries, these countries include Brazil, India, China, some US states, France and Italy. Nevertheless, the WTO has adopted a trade-centric approach when analysing cases involving renewable energies. In fact, the WTO architecture does not contemplate the adoption of socially desirable subsidies which can be challenged on competitive grounds[306]. It fails to recognize that certain types of subsidies are good in itself as they try to enhance the shift towards clean energy and reduce carbon emissions[307], thus protecting the environment and also human health. Furthermore, cases involving environmental energies are likely to increase in the near future as the size of the market continues to increase and much more significant reduction targets are pursued[308].

There exists no substantial difference between fossil fuel subsidies and renewable energy ones, however only the latter have been challenged so far[309]. Indeed, subsidies to clean energy are to be continued and enhanced in order to face the unfair competition carried out by fossil fuels. The only trade distortion here is performed by the fossil fuel industry which precludes the establishment of a competitive clean energy sector. Therefore, subsidies to green energy are deemed as necessary in order to facilitate the

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[300] Garima Sahdev, *Renewable Energy Subsidies: Reigniting the Clean Energy Trade Debate* (ORF Issue Brief No. 144 2016), 3.
[301] India – Certain Measures Relating to Solar Cells and Solar Modules, WTO Doc WT/DS456/R/Add.1 (Report of the Panel, 2016) [hereinafter *India – Solar Panels*].
[302] Canada — Certain Measures Affecting the Renewable Energy Generation Sector, WTO Doc WT/DS412/AB/R, WT/DS426/AB/R, AB-2013-1 (Report of the Appellate Body 2013).
[303] China — Measures Concerning Wind Power Equipment, WTO Doc WT/DS419/1, G/L/950 G/SCM/D86/1 (Request for Consultation by the United States 2011).
[304] Sahdev, *supra* note 300, 4.
[305] SCM Agreement, *supra* note 230, article 3.
[306] Patrick Low, *What Can Be Done to Blunt Potential Conflict Between Climate Change and Trade Policies?* (European University Institute 2015), 7.
[307] Sahdev, *supra* note 300, 7.
[308] Droege et al, *supra* note 199.
[309] Sahdev, *supra* note 300, 6.

competitiveness of a clean energy industry and consequently meet the targets mentioned in the Paris Agreement.

Having recognized that the SCM fail to justify subsidies for environmental desirable reasons. Many commentators have suggested to apply article XX of the GATT as *lex specialis* to the SCM Agreement[310]. It could be invoked when dealing with cases of subsidies to environmental energies which discriminate among foreign and domestic goods. In fact, subsidies to renewable energies could be justified by paragraph (b) or paragraph (g) of article XX[311]. As discussed above in the section concerning article XX GATT, paragraph (b) applies to policies relating to the protection of human health, while paragraph (g) concerns conservation of exhaustible natural resources[312]. It can be argued that subsidies to clean energy relate to both paragraphs and since there is no exception in SCM, the GATT Agreement may be invoked to compensate this absence. However, a subsidy undertaken under the exception of article XX is likely to fail the test of the chapeau contained at the beginning of the article. The Appellate Body made clear that when analysing exceptions to WTO obligations, it will look for less trade-restrictive alternatives[313]. Since there is a distant connection between the subsidy and the consequences it aims to prevent, it is likely to fail the necessity requirement and therefore be the lest trade-restrictive measure to apply. Furthermore, in order to consider article XX as a *lex specialis* of the SCM, the legal provisions of the two treaties under consideration should be nearly identical (textual hook), but in this case this affinity does not exists[314]. Additionally, the SCM does not remain silent about an environmental exception in the field of subsidies, but it is not in force any longer[315]. The SCM addresses the issue in article 8, paragraph 2, letter (c) which refers to *non-actionable subsidies*[316]. According to this provision environmental subsidies could be granted to firms in order to adapt to new environmental requirements. The peculiarity of this exception is that it consisted of a one-time non-recurring measure[317]. The length of the exception is provided in article 31 and address a period of five years after the entry into force of the WTO Agreement[318]. Eventually, they expired the 1 January 2000 and the members expressively declined to renew them[319]. The issue of renewable energy subsidies might lead to a form of discrimination

[310] Green, *supra* note 280, 408; Salzman and Wu, *supra* note 283, 453; Aaron Cosbey and Petros C. Mavroidis, *'A Turquoise Mess: Green Subsidies, Blue Industrial Policy and Renewable Energy: the Case for Redrafting the Subsidies Agreement of the WTO'* (European University Institute 2015), 17.
[311] Salzman and Wu, *supra* note 283, 453.
[312] GATT, *supra* note 154, article XX, paragraphs (b) and (g).
[313] Tran, *supra* note 152, 351.
[314] Salzman and Wu, *supra* note 283, 453.
[315] Tran, *supra* note 152, 358.
[316] SCM Agreement, *supra* note 230, article 8, paragraph 2, letter (c).
[317] Ibid 8.2.c. (i).
[318] SCM Agreement, *supra* note 230, article 31.
[319] Salzman and Wu, *supra* note 283, 453.

carried out by developed countries against developing ones and I will discuss the issue in the following paragraph.

3.4.2.1. Discrimination

In order to reduce GHG emission and still develop economically the utilization of green energy is of utmost importance. Developing countries should specially focus on the exploitation of renewable energies. In fact, the increase in GHG emissions in recent years has predominantly come from those countries as a result of rapid economic growth[320]. So, the exploitation of clean energy would be a valuable asset in order to meet NCDs target. However, the establishment of a functional renewable energy industry for developing countries is a particularly risky endeavour. There exist high barrier costs due to the purchase of high-technology equipment and there is an endless need for research and development[321]. These costs do not only apply to firms in developing countries but also to those established in developed ones, but what differentiate between them is how they have utilized subsidies under the SCM Agreement. In fact, developed countries took full advantage of the flexibility provided by article 8, paragraph 2, letter c on non-actionable subsidies and invested a lot of resources on the development of a domestic clean energy industry. Indeed, they have done so until the end of this exception (2000), thus actively disadvantaging industrializing countries. In fact, it is easy to understand that developed nations spend more resources on clean technologies than their less financially endowed counterparts. So, when the non-actionable period was over and developing countries start subsidizing their infant industries those kinds of subsidies were actionable if they had adverse consequences on other member's production or exports. Since developed countries had already established their industries, any type of subsidies would have impacts on those sectors of the economy. Moreover, the renewable energy industry represents a high profit market for industries in developed countries which have all the interest to maintain their advantage and exports to developing countries[322]. So, the renewable energy sector is in a phase in which infant industries in developing countries face cheapened competition from products of industrialized countries whose low prices are due to massive government subsidies[323]. Currently industrialized countries try to stop developing members from doing the same type of subsidization because the period has already expired and there was no consensus about renewing the non-actionable period.

[320] European Commission, *supra* note 15.
[321] Sahdev, *supra* note 300, 7.
[322] Ibid.
[323] Saner, *supra* note 273, 57.

3.5. Internationally Transferred Mitigation Outcomes (ITMOs) and Sustainable Development Mechanism (SDM)

Paris Agreement article 6 envisions two market-based mechanisms that countries may apply in order to fulfil their NDCs[324]. They have not been exhaustively defined, however, it is possible to draw some parallelism with other market-based mechanisms established under the Kyoto Protocol. As discussed above, the ITMOs are very similar to emission trading systems (ETS)[325]. ETS are a system of carbon pricing which set a limit of maximum emissions that any factory is allowed emit, consequently emissions not used can be sold to other factories that need them for their production processes. Theoretically, the price of traded emissions should reflect the marginal costs of reducing emissions, thus making it economically reasonable to invest in carbon saving technologies[326]. Currently, there are a number of ETS around the world, the most important are the EU Emission Trading Scheme and the California Cap-and-Trade Program[327], moreover China has announced that it is going to develop a national ETS which has the capability of becoming the largest carbon market in the world[328]. Therefore, the right implementation of ITMOs is vital to the favourable outcome of the Paris Agreement. As a matter of fact, 92 INDCs, mainly from developing countries, stated their willingness to participate in cooperative reduction approaches, while others, especially developed countries stated their intention to buy carbon credits[329]. Nevertheless, ETS are not well defined according to international trade law and this gives rise to uncertainty regarding which international treaty should covers them. In fact, it is debated whether emission traded credits constitute goods under the GATT or services under the General Agreement on Trade in Services[330]. However, the real problem would arise if carbon pricing coalition emerged and a more favourable treatment than the most-favoured-nation would be reserved to countries that apply an ETS. I have already undertaken this discussion in the section analysing the carbon tax (see above, page 36).

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[324] Paris Agreement, *supra* note 7, article 6.
[325] See above, page 19.
[326] Tamiotti et al, *supra* note 150, 91.
[327] Ling et al., *'The allowance mechanism of China's carbon trading pilots: A comparative analysis with schemes in EU and California'* (2017) 185 Applied Energy 1849.
[328] Zhang et al. *'Emissions trading in China: Progress and prospects'* 75 (2014) Energy policy 9; Liwei et al., *'China' s carbon-emissions trading: Overview, challenges and future'* (2015) 49 Renewable and Sustainable Energy Reviews 254; Ren Cong and Alex Y. Lo, *'Emission trading and carbon market performance in Shenzhen, China'* (2017) 193 Applied Energy 414.
[329] Droege et al, *supra* note 199, 30.
[330] GATS: General Agreement on Trade in Services, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1B, 1869 U.N.T.S. 183, 33 I.L.M. 1167 (1994), [hereinafter GATS].

The SDM, on the other hand, may refer to two other market-based mechanisms contained in the Kyoto Protocol: the Clean Development Mechanism (CDM) and the Joint Implementation (JI)[331]. The CDM and the JI are systems that operate through carbon offsets. Carbon offsets are created when a factory acts through investments in cleaner production processes that reduce carbon emissions in another factory established in another country. Those credit offsets, consequently, can be used to emit domestically or can be sold in a carbon trading market[332]. There is a substantial difference regarding the two mechanisms, because the CDM applies to projects sponsored by Annex I countries in non-Annex I countries, while the JI to projects applies among Annex I countries. However, the Paris Agreement overcomes this difference and its market-based mechanism will apply to both sets of countries on a voluntary basis. Even if guidance regarding the SDM will be developed by the CMA, scholars have speculated that this mechanism will be more inclusive than its predecessors and not only restricted to project-based initiatives[333]. In fact, by referring to sustainable development the parties were willing to accept credit offsets coming from nation-wide policies or programs[334]. Credits coming from the SDM can be regarded as subsidies by the SCM Agreement[335] and possibly sanctioned if they are *"specific to an enterprise or industry or group of enterprises or industries"*[336]. However, the SDM is likely to involve a large number of factories across many sectors of the economy in order to mitigate GHG emissions. Therefore, the specificity requirement is likely to be inapplicable to the SDM[337]. Additionally, article 2 also requires that subsidies conferred to specific industries ("certain industries") shall exist *"within the jurisdiction of the granting authority"*[338]. Nevertheless, this last condition is controversial when applied to the SDM. As a matter of fact, this type of international financing should be exempted from this requirement. In fact, the subsidy is granted by a third state to a receiving state in order to fund emission saving projects or policies[339]. According to this view, it seems that the SDM would be exempted from the jurisdictional requirement. However, it is likely that funds destined to SDM projects and programs will be address to national governments that in return will allocate such funds according to their priorities[340]. Therefore, according to this last observation is not clear whether

[331] See above, page 19.
[332] Tamiotti et al, *supra* note 150, 94
[333] Bodansky, *supra* note 2, 307.
[334] See above, page 19.
[335] Wold, *supra* note 227, 905.
[336] SCM Agreement, *supra* note 230, article 2, paragraph 1.
[337] Wold, *supra* note 227, 905.
[338] SCM Agreement, *supra* note 230, article 2, paragraph 1.
[339] Wold, *supra* note 227, 905.
[340] Ibid.

the SDM would be considered *"within the jurisdiction of the granting authority"*[341] and therefore an actionable subsidy. Finally, clarity needs to be done in order to activate cooperative tools that are included in many NDCs and may enable the achievement of the goals of the Paris Agreement.

3.6. Conflicts between WTO and MEAs

The relation between MEAs and the WTO system is complex. I have discussed the many conflicts that such difficult situation has already brought about or is likely to do in the future. What I will do in this section is considering other two possible ways of conflict between the two systems. In fact, clashes between the WTO and environmental measures may arise because of different interpretations given to the treaties. However, this issue may be solved by inserting provisions that exempt MEAs from clashes with international trade. So, I will firstly discuss the rules of interpretation that can be implemented when analysing conflicts between international trade and environment and secondly, I will examine free-trade-agreements (FTAs) and analyse their relationship with the environment.

3.6.1. Interpretation

The WTO dispute settlement system has been called to rule upon the legality of different trade measures taken pursuant to the protection of the environment. However, since the organization is devoted to international trade, it is not surprising that it has interpreted such cases according to a trade-centred perspective. Consequently, it usually regards environmental measures conflicting with trade as illegal per se as prescribed by WTO provisions[342]. So far, the DSB has only come across measures that were taken unilaterally by WTO members and it is not sure how it might respond to cases involving measures undertaken in accordance with MEAs' provisions. In fact, unilateral measures are controversial as they may hinder a trade discrimination behind the façade of environmental restrictions. Conversely, an MEA is multilateral in nature and it is governed by a democratic treaty-making process to which every nation has right to participate[343]. Moreover, by acceding to an MEA, which is an international treaty governed by international law[344], parties express their consent to be bound by the very same provisions to which they

[341] SCM Agreement, *supra* note 230, article 2, paragraph 1.
[342] Ryan L. Winter, *'Reconciling the GATT and WTO with Multilateral Environmental Agreements: Can we have our cake and eat it too?'* (2000) 11 Colo. J. Int'l Envtl. L. & Pol'y 223, 234.
[343] Ibid.
[344] Vienna Convention, *supra* note 8, article 2, paragraph 1, letter (a).

have participated to outline[345]. This aspect has been recognized by the Appellate Body in the *US - Shrimp* case. Moreover, it has indicated that the case may have ended differently had the USA entered cooperative multilateral negotiations with the affected members[346]. In fact, the Appellate Body suggested that multilateral measures are to be preferred in comparison of unilateral ones[347]. Therefore, one might think that measures undertaken according to MEAs provisions may be justified under the WTO system. However, it is still to be decided whether future Appellate Bodies will further consider this interpretation or resort to a more conventional trade-protective analysis[348].

The issue discussed above takes place when two international treaties discipline the same subject matter and somehow a conflict arises between the two regimes. In the case under our consideration, a WTO member is also party to an MEA, so the argument is to decide according to which treaty it should consider itself to be bound when it comes to international trade. The Vienna Convention 1969 laid down some guidelines in order to solve similar disputes. Article 30, paragraph 3 of mentioned Convention establishes a temporal test according to which the latter treaty should replace the former in places where the obligations of the first treaty are inconsistent with the provisions of the second[349]. According to this principle all the MEAs signed before 1994 would be replaced by the GATT 1994 for what concern the inconsistencies in the field of international trade and conversely, all the MEAs singed after that year should replace the GATT 1994[350]. However, many unwanted outcomes may arise by applying this method. In fact, it would totally wipe out many international environmental treaties to which countries are willing to be bound by. For example, the Montreal Protocol, signed in 1987 would be inconsistent with the GATT 1994, notwithstanding that it is regarded as the most successful treaty in international environmental law, as it effectively restricts international trade in ozone depleting substances[351]. Therefore, another solution might be considered. The rule of the *lex specialis* prescribes that specific treaties should override more general ones[352]. Nevertheless, it becomes controversial to define which is more specific when there is a clash between trade and the environment, so whether to apply the WTO treaties or an MEA. The issue becomes more complicated if a party to the WTO is not party to the MEA under consideration. In this case the obligations deriving from the MEA for one country do not bind the other country and consequently only GATT provisions should be

[345] Vienna Convention, *supra* note 8, 2.1.(g).
[346] *US – Shrimp*, *supra* note 155, [169]-[170].
[347] Ibid.
[348] Winter, *supra* note 342, 243.
[349] Vienna Convention, *supra* note 8, article 30, paragraph 3.
[350] Winter, *supra* note 342, 237.
[351] Robyn Eckersley, *'The Big Chill: The WTO and Multilateral Environmental Agreements'* (2004) 4.2 Global Environmental Politics 24, 27.
[352] Winter, *supra* note 342, 238.

applied when resolving the dispute. However, the Montreal Protocol again is brought as an example. In fact, it effectively restricted trade in forbidden substances between parties and even non-parties to the agreement. Therefore, it is widely recognized that the approach undertaken in the Protocol has worked out. In fact, by applying the same provision to parties and non-parties it actively reduced free-riding incentives, since non-parties would not take any advantages by non-participating to the Montreal Protocol[353].

When considering the Paris Agreement, it should be born in mind that it does not contain binding requirements and its consequences to trade may only be indirect[354]. Therefore, the measures that Parties will take are likely to be all unilateral in nature, with the effect of being very weak against possible WTO challenges. Nonetheless, it is still to be seen how the DSB will rule in a case involving NDCs of the Paris Agreement, because even though they are unilateral acts they still contain traits of a multilateral approach. Indeed, the bottom-up approach to which NDCs are the results (see Bottom-up Approach above) was agreed during the negotiation stage and every nation consider itself to be bound by it.

3.6.2. FTAs and Environmental Provisions

There exists an exception to the most-favoured-nation principle in the WTO system and that regards the creation of a free-trade area. By establishing such free-trade area, the parties consistently lower barriers to trade and put them at a minimum, thus privileging the contracting parties of the free-trade area in comparison to other parties, to which the most-favoured-nation principle still apply. Free-trade areas are provided by article XXIV of the GATT[355] and article 5 of the GATS[356]. So, having recognized the problems of resolving conflicts between the WTO and the environment, new FTAs can insert provisions in which they reinforce measures taken under MEAs and raise the environment as the same level of international trade. It is likely that these kinds of provisions inserted in FTAs are going to increase after the Paris Agreement because of the new commitments and concerns over environmental issues. In fact, the French foreign affairs minister Jean-Baptiste Lemoyne explained to the French Parliament that any country seeking a trade deal with the EU must have implemented the Paris Agreement[357]. As a matter of fact, the EU has made the protection of the environment a prerequisite for the negotiation of an FTA and therefore it includes the so

[353] Eckersley, *supra* note 351.
[354] Aaron Cosbey, *'The Paris Climate Agreement: What Implications for Trade?'* (2016) 129 Commonwealth Trade Hot Topics 1, 1.
[355] GATT, *supra* note 154, article XXIV.
[356] GATS, *supra* note 330, article 5.
[357] Karl Mathiesen, 'France to Trump: 'No Paris Agreement, no EU trade agreement'' (*Climate Home News*, 2 February 2018) <http://www.climatechangenews.com/2018/02/02/france-us-no-paris-agreement-no-trade-agreement-1/> accessed 27 April 2018.

called “climate positive” provisions as condition for signature[358]. Indeed, it has already finished negotiations of an FTA with Singapore in which they included climate positive provisions by committing the Parties to facilitate trade and investment in climate-friendly goods and services[359], moreover they also commit themselves to lower fossil fuels subsidies in order to reduce GHG emissions[360].

FTAs may also exempt certain MEAs measures from disputes against international trade. The North American Free Trade Agreement (NAFTA) article 104 is an example[361]. It states that if there is going to be any inconsistency between the NAFTA and trade obligations provided by the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, the Convention on International Trade in Endangered Species of Wild Fauna and Flora and the Montreal Protocol, the obligations of deriving from the mentioned MEAs shall prevail[362].

Finally, FTAs adopted after the Paris Agreements may include both types of provisions: climate positive and exempting. However, for the latter the issue remains controversial as the Paris Agreement addresses international trade only indirectly through unilateral NDCs. However, they might be given a legal binding status on the sort of what has been done between States and International Organizations regarding the advisory opinions of the International Court of Justice (ICJ). In fact, article 66, paragraph 2 letter (e) of the Vienna Convention on the Law of Treaties between States and International Organizations or between International Organizations (1986) prescribes that advisory opinions given by the ICJ shall be regarded as binding upon the parties of the dispute[363]. What it does is to take a non-binding advisory opinion given by the ICJ and turn it into a binding ruling. Therefore, a similar reasoning may be applied according to NDCs of the Paris Agreement. The issue in regarding this case is whether the parties to an FTAs want to be bound by NDCs which they decided to make unilateral and non-binding during the negotiation stage of the Paris Agreement.

[358] Winter, *supra* note 342, 247.
[359] European Commission, ‘EU-Singapore trade and investment agreements (authentic texts as of April 2018)’ <http://trade.ec.europa.eu/doclib/press/index.cfm?id=961>, article 12.11 paragraph 2.
[360] Ibid. article 12.11 paragraph 3.
[361] North American Free Trade Agreement (adopted 17 December 1992, entered into force 01 January 1994) 32 I.L.M. 289, article 2101(1) 104.
[362] Ibid.
[363] Vienna Convention on the Law of Treaties between States and International Organizations or Between International Organizations (adopted 21 March 1986) 25 ILM 543, article 66, paragraph 2, letter (e).

4. Conclusion

The Paris Agreement have been a turning point in the field of international environmental law from which it will be almost impossible to move away in the future. In fact, this Agreement establishes that only countries can unilaterally pose targets upon themselves. Furthermore, a horizontal system of monitoring was put in place. Therefore, there is not any higher authority which oversees the members to the Agreement and monitor its actions. The Paris Agreement represents the final point of a trend that has been consolidating in Multilateral Environmental Agreements. In fact, it is thought that countries are the best actor for what it concerns GHG emission reduction, because they are the ones that know and understand the individual national circumstances that any different country has to face. The shift from a top-down to a bottom-up approach is synonym of a structural change in the interests and objectives of the international community. The Paris Agreement is relatively new, consequently its provisions have not been embraced and put into practice yet. Moreover, the first round of NDCs will take place in 2020, therefore some time is required to have clarity regarding the efficacy of the Paris Agreement and its acceptance by the international community.

The relationship between the environment and trade is a difficult one that does not seem to have any end. In fact, it is difficult to establish which is more important than the other. Moreover, it is also possible that what one country defines as a priority may not be shared by other members of the international community. Because of this lack of clarity, it is difficult to establish what effects will the Paris Agreement, and especially its NDCs, have on the WTO system. However, it is possible to recognize a pervasive trend in the field international trade law according to which this discipline shall not be isolated and is willing to come in contact with international environmental law. Nevertheless, there are no guarantees that this trend will continue and what impact will have the Paris Agreement: positive, negative or none. In fact, at the time of writing and given the literature available and consulted for this piece of work, it is difficult to forecast how the WTO will respond to the Paris Agreement. Indeed, what it is possible to do is to speculate about this future relationship given past trends and especially past case law. In fact, until there is a conflict involving environmental provisions contained into the Paris Agreement and obligations of the WTO upon which an international Court is called to rule, the matter will remain controversial.

In this work I discussed how international law is an academic disciplined that is not isolated from other issues under discussion in the international agenda. Coherently, it tries to integrate them and address them. That is why I described issues of discrimination between developed and developing countries. As far as I am concerned, it is one of the main issues the international community is required to take a position because it is recurrent in both international environmental law and international trade law.

Finally, climate change is a very difficult problem that requires cooperation in many different fields and at many different levels. The international community has shown in the Paris Agreement that it is

willing to respond to these problems, however its tools are regarded as weak. Additionally, interests of the WTO may further complicate the action carried by the member states. Until, this matter is finally clarified it is only possible to theorize possible solutions and speculate about the future.

5. Riassunto

Questa tesi analizzerà nel dettaglio le caratteristiche principali dell'Accordo di Parigi e la relazione che intercorre tra le misure invocate in questo Accordo e le norme che governano il commercio internazionale. La prima parte di questa tesi si concentrerà sull'analisi delle caratteristiche che rendono l'Accordo di Parigi un punto di svolta nel diritto internazionale dell'ambiente. Esso è il risultato di un mutamento di forze nelle relazioni tra stati e di una trasformazione nella percezione del cambiamento climatico e delle relative strategie di contrasto. Dopo aver analizzato le novità dell'accordo, ne discuto della reale adottabilità delle misure proposte in relazione alle norme del commercio internazionale contenute all'interno dell'Organizzazione Mondiale del Commercio. Infatti, il cambiamento climatico ha una natura interdisciplinare e conseguentemente le misure di mitigazione o adattamento a questo problema possono entrare in conflitto con altri campi del diritto internazionale. Per questi motivi, l'elaborato si pone l'obiettivo di chiarire il motivo per il quale l'Accordo di Parigi rappresenta un unicum nel panorama del diritto internazionale e dimostrare che le misure adottate secondo principi di contrasto ai cambiamenti climatici hanno un potenziale impatto sul commercio internazionale. Di conseguenza le due materie andrebbero trattare congiuntamente a differenza della separazione che è possibile osservare al giorno d'oggi. Per la redazione della tesi ho consultato la letteratura italiana e internazionale che analizza dettagliatamente l'Accordo di Parigi, inoltre per meglio comprendere le differenze e mettere a confronto i diversi trattati ho analizzato il Protocollo di Kyoto, la Convenzione Quadro delle Nazioni Unite sul Cambiamento Climatico e i rilevanti strumenti adottati dalla Conferenza delle Parti. Di seguito, ho studiato i trattati che costituiscono l'Organizzazione Mondiale del Commercio tra i quali: l'Accordo Generale sulle Tariffe e il Commercio, l'Accordo Generale sul Commercio di Servizi, Accordo sugli Aspetti Commerciali dei Diritti di Proprietà Intellettuale, l'Accordo sulle Sovvenzioni e le Misure Compensative.Ho anche analizzato i principali casi giudicati all'interno dell'Organizzazione Mondiale del Commercio in cui c'è stato un conflitto tra norme ambientali e commerciali, il tutto è stato investigato facendo riferimento alla letteratura disponibile sul tema delle relazioni tra commercio internazionale e diritto internazionale dell'ambiente.

Il primo capitolo analizza le caratteristiche principali dell'Accordo di Parigi. Descrivo, innanzi tutto, la natura dell'Accordo di Parigi che è l'ultimo strumento in ordine temporale adottato dalla Conferenza delle Parti per quanto riguarda la mitigazione e l'adattamento al cambiamento climatico. Esso è formalmente un allegato alla Decisione presa dalla 21^{esima} Conferenza delle Parti riunitasi a Parigi dal 30 novembre al 13 dicembre 2015 ed è costituito da un preambolo e 29 articoli. L'Accordo ha 197 firmatari dei quali, ad aprile 2018, 175 lo hanno già ratificato. L'Accordo di Parigi è un trattato governato da norme di diritto internazionale secondo la definizione riportata dall'articolo 2, paragrafo 1, lettere (a) e (b) della

Convenzione di Vienna sul Diritto dei Trattati del 1969. Questo articolo considera trattati internazionali tutti quegli strumenti per cui uno stato cede sovranità in un determinato campo e sottolinea questa volontà attraverso la sua ratifica. Questo particolare viene descritto dagli articoli 20 e 21 dell'Accordo di Parigi, il primo riguarda la firma mentre il secondo concerne la ratifica. L'Accordo di Parigi è stato descritto come un punto di svolta nel campo del diritto internazionale dell'ambiente poiché utilizza delle caratteristiche mai implementate nei precedenti Accordi Multilaterali sull'Ambiente. Prima fra tutte è l'abbandono di un'architettura del trattato dall'alto verso il basso (*top-down*), utilizzata in precedenza, per adottare un innovativo approccio dal basso verso l'alto (*bottom-up*). Con questo criterio, i membri appartenenti all'accordo decidono individualmente e autonomamente i propri obiettivi riduzione di gas serra. Questi obiettivi vengono chiamati *Nationally Determined Contributions* (NDCs) e sono totalmente diversi dagli obiettivi vincolanti di abbattimento di gas serra contenuti nell'articolo 3, paragrafo 1 del Protocollo di Kyoto, il quale comanda per i paesi appartenenti all'Allegato I la riduzione del 5% delle emissioni rispetto ai livelli del 1990 durante il periodo 2008-2012. Le NDCs sono lo strumento sul quale la struttura dal basso verso l'alto è fondata e sono disciplinate dall'articolo 4 dell'Accordo di Parigi. Nello specifico l'articolo 4, paragrafo 2 è strutturato in maniera tale che esse non diano risultato ad obiettivi vincolanti di riduzione, ma sono solamente frutto di uno sforzo prodotto al livello nazionale. Tuttavia, le NDCs devono essere formulate in maniera tale da rendere possibile il raggiungimento collettivo dell'obiettivo dell'accordo definito dall'articolo 2, paragrafo 1 lettera (a). Infatti, l'Accordo di Parigi si pone il traguardo di limitare l'aumento delle temperature globali molto al di sotto dei 2 gradi centigradi rispetto ai livelli precedenti la rivoluzione industriale. L'articolo 14, paragrafo 1 istituisce un nuovo organo all'interno della Conferenza delle Parti: la Conferenza delle Parti che serve come assemblea delle Parti all'Accordo di Parigi (in inglese abbreviato in CMA), il cui compito è quello di controllare periodicamente lo stato dell'Accordo e il raggiungimento dei suoi obiettivi. Secondo l'articolo 14, paragrafo 3, la CMA deve divulgare informazioni e sviluppare linee guida da implementare nella stesura di nuove NCDs, le quali devono essere rinnovate ogni cinque anni. Come già detto, le NDCs sono stabilite autonomamente dai singoli membri, conseguentemente la differenza tra paesi appartenenti all'Allegato I e non appartenenti all'Allegato I, da cui derivano obblighi vincolanti di riduzione solamente per i primi secondo il Protocollo di Kyoto, stabilita dalla Convenzione Quadro delle Nazioni Unite sul Cambiamento Climatico sembrerebbe essere superata. Tuttavia, le diverse NDCs dovrebbero pur sempre rispettare il principio delle Responsabilità Comuni Ma Differenziate – Rispettive Capacità (in inglese abbreviato in CBDR-RC) descritto nel principio numero 7 della Dichiarazione di Rio sulla Terra e lo Sviluppo del 1992. Secondo tale principio, i paesi industrializzati che più hanno inquinato nel tempo e sono in possesso di tecnologie avanzate devono porsi obiettivi di riduzione di gas serra più importanti rispetto a paesi emergenti i quali hanno cominciato ad emettere da minor tempo e non hanno le tecnologie necessaria per aspirare ad obiettivi di riduzione più stringenti. L'Accordo di Parigi ha inoltre aggiunto al principio delle CBDR-RC il riferimento "alla luce delle differenti circostanze nazionali".

Quest'ultimo principio è alla base dell'Accordo di Parigi e non a caso è stato inserito all'articolo 2, paragrafo 2, subito dopo l'obiettivo globale dell'Accordo. Infatti, viene riconosciuto che il cambiamento climatico è un problema collettivo dal quale derivano responsabilità comuni che però devono essere differenti per ogni membro il quale, in piena autonomia, decide il proprio contributo alla causa collettiva alla luce delle proprie capacità e circostanze nazionali. In aggiunta, il principio delle CBDR-RC alla luce delle differenti circostanze nazionali è alla base del raggiungimento del picco globale di carbonio descritto dall'articolo 4, paragrafo 1. Secondo questo articolo le parti si impegnano a raggiungere il prima possibile il picco globale di carbonio (responsabilità comune), tuttavia i paesi emergenti hanno uno "spazio di carbonio" per il quale possono emettere di più e per più tempo rispetto ai paesi industrializzati e quindi hanno più tempo per raggiungere il picco di carbonio (responsabilità differenziata). L'Accordo di Parigi possiede anche un sistema di controllo e ottemperanza basato sui principi di un accordo con una architettura dal basso verso l'alto. Infatti, dato che questo tipo di approccio è di tipo cooperativo, il meccanismo ha natura facilitativa, che promuove la trasparenza e il carattere non-sanzionatorio. Come spiegato sopra le NDCs non hanno carattere vincolante, tuttavia esse obbligano gli stati a fornire requisiti procedurali vincolanti. Questo aspetto è descritto dall'articolo 4, paragrafo 8 secondo il quale le parti devono fornire tutte le informazioni necessarie riguardo il raggiungimento degli obiettivi riportati nelle NDCs, il tutto per promuovere trasparenza e chiarezza. L'articolo 4, paragrafo 13 stabilisce inoltre, che i membri debbano tener conto globalmente delle NDCs in un sistema comune di calcolo. Dagli ultimi due requisiti si evince la trasparenza che contraddistingue l'Accordo di Parigi. Si ritiene che questo tipo di meccanismo di pressione tra pari prevenga condotte nocive verso l'Accordo poiché sarebbe facile capire il colpevole. In aggiunta, l'Accordo lavora anche secondo un meccanismo di doverosa diligenza (due diligence) il quale può essere dedotto dalla seconda frase dell'articolo 4, paragrafo 2. La frase in questione pone a carico delle parti l'obbligo morale di perseguire misure di riduzione domestiche con l'obiettivo di portare a termine le proprie NDCs, le quali chiaramente rimangono non vincolanti. L'Accordo di Parigi inoltre stabilisce anche un Quadro per la Trasparenza (Transparency Framework) disciplinato dall'articolo 13. Quest'ultimo, a differenza dei due organi differenti uno per i paesi emergenti e l'altro per quelli industrializzati stabiliti dall'Accordo di Cancún, lavora per entrambi i gruppi di paesi. Tuttavia, il paragrafo 2, riconosce flessibilità rispetto alla trasparenza sempre per il principio delle CBDR-RC in base alle differenti circostanze nazionali. I paesi industrializzati sono obbligati, quindi, a presentare i loro inventari di emissioni di gas serra annualmente, mentre i paesi in via di sviluppo devono fare lo stesso ogni due anni. Inoltre, le parti sono anche chiamate a divulgare tutte le informazioni necessarie al fine di poter tracciare i progressi di ogni NDC. Secondo l'articolo 13, paragrafo 7 queste informazioni dovranno essere analizzate da un gruppo di esperti che dovrà fornire suggerimenti sempre tenendo conto delle differenti capacità nazionali. Insieme al Quadro per la Trasparenza, l'Accordo stabilisce anche un Meccanismo di Controllo e Ottemperanza (Control and Compliance Mechanism) descritto nell'articolo 15. Nel paragrafo 2, viene stabilito che il meccanismo

svolgerà le sue funzioni attraverso un comitato di esperti. Viene definito che il lavoro svolto dal comitato dovrebbe essere di natura facilitativa e non punitiva. Questo aspetto lo rende totalmente differente dal meccanismo di controllo e ottemperanza che le Parti potevano istituire all'interno del Protocollo di Kyoto. L'articolo 18 infatti, disciplinava che tale organo aveva poteri sanzionatori di fatto evidenziando il distinto approccio dall'alto verso il basso caratteristico del Protocollo di Kyoto. L'ultima parte del primo capitolo si concentra sull'analisi dei meccanismi di mercato, di finanziamento e di trasferimento di tecnologia che saranno poi analizzati in relazione alle norme del commercio internazionale nel secondo capitolo. L'Accordo di Parigi regola la creazione di due meccanismi di mercato. Il primo descritto nel paragrafo 2, prevede la possibilità per le Parti di entrare in approcci cooperativi su base volontaria in maniera tale da scambiarsi Risultati di Mitigazione Trasferiti Internazionalmente (abbreviato in inglese in ITMOs) con il fine di raggiungere i propri obiettivi descritti nelle NDCs. È possibile notare la somiglianza tra il meccanismo ITMOs e il sistema di scambio delle emissioni sviluppato dal Protocollo di Kyoto. Il secondo meccanismo è descritto nel paragrafo 4 ed è stato chiamato Meccanismo per lo Sviluppo Sostenibile (abbreviato in inglese in SDM). Il suo scopo è quello di mitigare le emissioni di gas serra e allo stesso tempo promuovere lo sviluppo sostenibile. Esso è chiaramente ispirato dal lavoro svolto dal Meccanismo di Sviluppo Pulito e dal sistema di Implementazione Congiunta stabiliti dal Protocollo di Kyoto. Infatti, l'SDM congloba in se i due precedenti meccanismi e ne allarga l'obiettivo dato che può generare compensazioni di gas serra non solo per progetti locali, ma anche per iniziative di politiche nazionali. Per quanto concerne il finanziamento, l'articolo 9, paragrafo 1 ribadisce gli obblighi stabiliti dalla Convenzione Quadro delle Nazioni Unite per il Cambiamento Climatico. Secondo l'articolo 4, paragrafo 3 della Convenzione Quadro delle Nazioni Unite per il Cambiamento Climatico, gli stati appartenenti all'Allegato II (un sottoinsieme dell'Allegato I) devono garantire risorse finanziare e assistenza ai paesi in via di sviluppo in materia di mitigazione e adattamento al cambiamento climatico. Inoltre, per la prima volta l'articolo 13, paragrafo 2 dell'Accordo di Parigi allarga il bacino dei donatori ad "altre Parti", le quali sono incoraggiate a contribuire su base volontaria. L'Accordo in sé non contiene nessun riferimento riguardo la cifra da mobilitare per gli aiuti economici, tuttavia il paragrafo 53 della Decisione di Parigi conferma la volontà di seguire l'obiettivo di 100 miliardi di dollari all'anno entro il 2025 definito nel paragrafo 8 dell'Accordo di Copenaghen. L'articolo 10 che si occupa del trasferimento di tecnologia ha solamente una natura esortativa e programmatica. Esso si limita ad incoraggiare le parti ad accelerare il trasferimento di tecnologia verso i paesi invia di sviluppo particolarmente nei campi della resilienza e dello sviluppo sostenibile. Il paragrafo 3 dell'articolo 10, introduce il Meccanismo di Tecnologia (Technology Mechanism) stabilito dal paragrafo 117 della Decisione della 16^{esima} Conferenza delle Parti tenutasi a Cancún. Inoltre, il paragrafo 4 stabilisce la formazione di un quadro per la tecnologia che dovrebbe coadiuvare il lavoro svolto dal Meccanismo di Tecnologia. Infine, data la scarsità di dettagli fornita dall'articolo 10 in materia di trasferimento di tecnologia svolta dai suoi

organi e alla natura prettamente esortativa e programmatica dell'articolo, ha fatto ipotizzare agli accademici che il trasferimento di tecnologia all'interno dell'Accordo di Parigi svolgerà un ruolo quasi insignificante.

Il secondo capitolo tratta della relazione che intercorre tra alcune delle possibili misure contenute nell'Accoro di Parigi e la loro adottabilità secondo le norme contenute all'interno dei trattati internazionali che formano l'Organizzazione Mondiale del Commercio (OMC). Prima di tutto, l'esistenza di una relazione tra misure atte a mitigare e adattarsi al cambiamento climatico e il commercio internazionale è stata riconosciuta fin dalla Convenzione Quadro delle Nazioni Unite sul Cambiamento Climatico. Infatti, l'articolo 5, paragrafo 3 di tale Convenzione incoraggia la creazione di un sistema economico internazionale aperto che risponda ai problemi legati al cambiamento climatico attraverso la crescita economica e lo sviluppo sostenibile. La prima misura presa in considerazione è quella di adottare l'articolo XX dell'Accordo Generale sulle Tariffe e il Commercio (AGTC). Secondo questo articolo i membri del OMC possono unilateralmente adottare misure che confliggono con i principi dell'OMC per raggiungere legittimi obiettivi di politica interna, però devono giustificare tale comportamento attraverso le eccezioni fornite dallo stesso articolo XX. Questo strumento può essere utilizzato da membri che ipotizzano l'implementazione nelle loro NDCs di politiche volte alla salvaguardia dell'ambiente che però collidono con le norme del commercio internazionale. Le due eccezioni rilevanti, per quanto riguarda, la lotta al cambiamento climatico sono i paragrafi (b) e (g). Il primo concerne la protezione della salute umana, animale e vegetale, il secondo la protezione di risorse esauribili. Come descritto dall'Organo d'Appello dell'OMC nel caso US – Gamberetti (US – Shrimp), una misura per essere giustificata dall'articolo XX deve passare un'analisi a due livelli. Il primo è quello di soddisfare almeno una delle eccezioni fornite dall'articolo XX. Nel caso dei paragrafi (b) e (g) i precedenti legali hanno fatto intendere che le misure adottate devono essere necessarie e collegate con quanto espresso nei paragrafi. Inoltre, è estremamente possibile, secondo l'interpretazione data al caso Brasile – Pneumatici Ricostruiti (Brasil – Retread Tyres), che eventuali misure adottate in seguito all'Accordo di Parigi e rivolte alla mitigazione e all'adattamento al cambiamento climatico possano rientrare nelle eccezioni fornite dai paragrafi (b) e (g). Il secondo livello è quello di soddisfare la clausola introduttiva all'articolo XX. Questo impone che le misure portate avanti attraverso le eccezioni non debbano costituire un'ingiustificabile discriminazione verso paesi nei quali prevalgano le stesse condizioni oppure rappresentare una mascherata restrizione al commercio internazionale. Mentre i precedenti hanno interpretato ampiamente il significato delle eccezioni, per quanto riguarda la clausola introduttiva l'Organo d'Appello ha adottato una lettura molto più restrittiva. Di conseguenza, nessuna misura adottata con la giustificazione dell'articolo XX è mai stata ritenuta legale ed ha sempre dovuto essere modificata o abolita. La seconda misura presa in esame è l'imposizione di una tassa sul carbonio (carbon tax). La tassa sul carbonio applica un costo sulle emissioni di anidride carbonica che avvengono durante la produzione di prodotti o energia. In questa maniera essa internalizza nel prezzo del prodotto finale o dell'energia utilizzata

i costi esterni (in questo caso l'acuirsi del cambiamento climatico provocato dall'aggiunta di ulteriore anidride carbonica nell'atmosfera) dovuti alla produzione dello stesso oggetto o dell'energia. Una tassa sul carbonio è incoraggiata dall'Accordo di Parigi in quanto essa disincentiva l'utilizzo di combustibili altamente inquinanti per favorire quelli meno emittenti (e di conseguenza meno tassati), in aggiunta le fabbriche o gli impianti di produzione di elettricità sono incoraggiati ad investire in processi di produzione che rilascino minori quantità di emissioni di carbonio. Tuttavia, una tassa sul carbonio colpisce negativamente i fabbricanti del paese che ha imposto tale tassa poiché i loro prodotti avrebbero un costo maggiore per via della nuova tassa. In un tale scenario, le importazioni da un paese che non applica una tassa sul carbonio sarebbero più convenienti per i consumatori mentre il paese con la tassa sul carbonio potrebbe sperimentare la perdita di posti di lavoro e la delocalizzazione delle imprese in paesi meno virtuosi dal punto di vista ambientale. Per ovviare a questi problemi gli stati che applicano una tassa sul carbonio potrebbero allo stesso tempo imporre un adeguamento dell'imposta di frontiera sul contenuto di carbonio che in questo caso prenderebbe il nome di adeguamento del carbonio alla frontiera (*border carbon adjustment* o BCA). Una BCA lavorerebbe in due direzioni per le importazioni e per le esportazioni. Per quanto riguarda le importazioni, l'articolo II, paragrafo 2, lettera (a) dell'AGTC permette gli stati membri di imporre adeguamenti di imposta alla frontiera purché la stessa tassa sia imposta ai prodotti simili domestici e che sia conforme al principio di trattamento nazionale, descritto nell'articolo 3 paragrafo 2 del medesimo trattato. La materia in esame diventa controversa quando si comincia a discutere della definizione di prodotti simili. Infatti, nel prodotto finale non vi è nessuna traccia del carbonio emesso per produrlo. In questo caso la discriminazione avviene al livello dei metodi di processo e produzione (MPP). Il quesito sotto esame è se due prodotti possono essere considerati differenti per delle caratteristiche differenti durante i loro MPP che risultano in diverse quantità di carbonio rilasciato nell'atmosfera che, tuttavia, non lascia traccia nel prodotto finale. Il Pannello del caso Tonni – Delfini I ha chiarito che differenti PPM non sono sufficienti per discriminare tra prodotti simili. In questo caso un paese che nelle proprie NDCs proponesse una tassa sul carbonio si troverebbe severamente limitato per quanto concernono contromisure commerciali. Al contrario un adeguamento di imposta alla frontiera per le esportazioni seguirebbe il principio di destinazione e consisterebbe nel rimborso delle tasse per i prodotti destinati alla vendita all'estero. Secondo l'articolo VI, paragrafo 4 del AGTC i prodotti a cui si applica l'adeguamento di imposta per le esportazioni non possono essere soggetti a dazi antidumping. Inoltre, la nota 1 dell'Accordo sulle Sovvenzioni e le Misure Compensative (ASMC) stabilisce che gli adeguamenti di imposta per le esportazioni non costituiscono un sussidio fin tanto che il rimborso non ecceda il livello della tassazione. Il terzo punto della mia ricerca si sofferma sul tema del trasferimento di tecnologia nel campo della lotta al cambiamento climatico. Questo è un tema molto importante per i paesi in via di sviluppo di cui il 63% delle loro NDCs pone come condizione necessaria per il loro totale o parziale raggiungimento il trasferimento di tecnologia dai paesi industrializzati. L'attuale sistema della proprietà intellettuale è governato al livello dell'OMC dall'Accordo sugli Aspetti

Commerciali dei Diritti di Proprietà Intellettuale. Questo trattato permette agli stati membri di fornire patenti agli inventori che divulgano le loro invenzioni al pubblico. Una patente attribuisce all'inventore il diritto di escludere altre persone dallo sfruttare la sua invenzione per un limitato periodo di tempo, che si aggira intorno ai 20 anni. In questo modo chi possiede una patente dispone del totale monopolio di sfruttamento e può imporre prezzi non competitivi per recuperare eventuali costi di ricerca e sviluppo. L'Accordo sugli Aspetti Commerciali dei Diritti di Proprietà Intellettuale garantisce due meccanismi con i quali le Parti possono attuare le proprie NDCs. La prima possibilità è garantita dall'articolo 27, paragrafo 2, che consente di rifiutare di patentare e sfruttare a fini commerciali invenzioni che potrebbero danneggiare la salute umana, animale o vegetale ed esporre l'ambiente a seri danni. In questo caso le invenzioni che accentuano i danni causati dal cambiamento climatico sarebbero legittimamente rifiutabili dato che causerebbero gravi conseguenze per tutte le categorie sopra citate. Tuttavia, è consigliabile che gli stati membri svolgano un'analisi di costi benefici quando si apprestano a rifiutare la patente di una certa invenzione che accentua il cambiamento climatico. Infatti, lo scopo principale dei diritti di proprietà intellettuale è quello di innalzare i livelli di benessere sociale ed economico della società. L'altra ipotesi è quella di intervenire con misure che impediscano l'abuso del diritto di proprietà intellettuale. L'articolo 8, paragrafo 2 riconosce che potrebbe esistere un conflitto tra il diritto al benessere della società e il diritto di proprietà intellettuale e, giustifica inoltre, l'utilizzo di misure che tentano di correggere questo squilibrio al fine di aumentare il benessere della società. La licenza obbligatoria è uno dei modi per correggere l'abuso della proprietà intellettuale ed esso costituisce un utilizzo non autorizzato della patente disciplinato dall'articolo 31. Nello specifico il paragrafo (b) dà la possibilità di garantire la licenza obbligatoria in casi nei quali il detentore della patente non abbia sfruttato la propria invenzione, mentre il paragrafo 1 prescrive che gli stati possono garantire la patente di una prima invenzione nel caso in cui la seconda patente sia dipendente dalla prima. Quindi i governi degli stati dei paesi in via di sviluppo potrebbero usare la strategia della licenza obbligatoria per raggiungere gli obiettivi delle NDCs. Tuttavia, non è chiaro in quali condizioni si può far uso della licenza obbligatoria per le invenzioni di mitigazione e adattamento al cambiamento climatico. Attualmente le uniche linee guida sono quelle definite dalla Dichiarazione di Doha sulla Salute Pubblica, la quale viene applicata chiaramente in campo medico. Il quarto aspetto analizzato è quello dei sussidi. Per raggiungere gli obiettivi proposti dall'Accordo di Parigi gli stati membri dovrebbero aumentare la produzione di energia elettrica da fonti rinnovabili e anche investire in processi produttivi meno inquinanti. Le fabbriche, al contrario, non hanno nessun incentivo ad adeguarsi, dato che non incorrono in costi aggiuntivi quando emettono anidride carbonica nell'atmosfera. Quindi è del tutto ragionevole che i governi degli stati garantiscano sovvenzioni per incoraggiare modelli produttivi più virtuosi. Tuttavia, gli aiuti comportano diversi squilibri al commercio internazionale per il fatto che il prezzo dei prodotti riceventi sussidi è di fatto ridotto artificialmente. Non sorprende infatti che il tema dei sussidi è il più controverso nella relazione tra misure ambientali e regole dell'OMC. Vi sono due maniere per cui le parti possono agire attraverso i sussidi. La prima è quella di

eliminarli per le fonti di energia fossile. Questa opzione è estremamente compatibile con gli obiettivi dell'Accordo di Parigi. Infatti, un prezzo più alto per queste fonti permetterebbe la diffusione su grande scala dello sfruttamento di energie rinnovabili con la seguente decarbonizzazione dell'atmosfera. Inoltre, questo tipo di interventi economici su larga scala rappresentano un impegno e un obbligo morale per i paesi industrializzati membri dell'Accordo di Parigi, come sancito dell'articolo 4, paragrafo 4. L'atra maniera di utilizzare i sussidi è quella di garantirli per la produzione di energia rinnovabili. Questa strategia ha due obiettivi principali: quello di ridurre le emissioni di gas serra in linea con gli obiettivi delle NDCs e quello di promuovere lo sviluppo di un'industria domestica capace di competere nei mercati internazionali. E proprio per questo motivo, i sussidi alla produzione di energia da fonti rinnovabili sono stati protagonisti di diverse controversie commerciali. Essi sono distorsivi per il commercio internazionale poiché incentivano il consumo di prodotti domestici a scapito delle importazioni. La giurisprudenza dell'OMC ha assunto un'analisi incentrata sul commercio quando è stata chiamata a giudicare casi di sussidi alle energie rinnovabili. Infatti, nei casi India – Pannelli Solari, Cina – Energia Eolica e Canada – Energia Solare le misure adottate da questi paesi sono state giudicate illegittime perché utilizzavano soglie di requisiti di contenuto locale proibite dall'articolo 3, paragrafo 1, lettera (b) dell'ASMC. Dato che l'ASMC non riesce a distinguere tra sussidi che distorcono il commercio e quelli desiderabili dal punto di vista ambientale, si potrebbe utilizzare l'articolo XX dell'AGTC come *lex specialis* all'ASMC. Tuttavia, l'Organo d'Appello ha chiarito che quando analizza eccezioni agli obblighi sanciti dall'OMC, esso vaglierà tutte le possibili alternative meno restrittive per il commercio ed è probabile che i sussidi falliscano questo requisito. In aggiunta, è improbabile che l'articolo XX venga considerato *lex specialis* dal momento che l'ASMC contiene norme che disciplinano i sussidi ambientali. Esse sono descritte nell'articolo 8, paragrafo 2, lettera (c) sotto la categoria delle *sovvenzioni che non danno diritto ad azione legale* (*non-actionable subsidies*). Tuttavia, questo tipo di sovvenzioni sono state una misura temporanea scaduta il 1° gennaio del 2000 a cui gli stati hanno espressamente negato il rinnovo per un ulteriore periodo di cinque anni. La quinta sezione analizza la praticabilità di ITMOs e del SDM all'interno delle regole dell'OMC. Per quanto concerne gli ITMOs essi sono di fondamentale importanza per l'Accordo di Parigi in quanto in 92 NDCs è espressa la volontà di partecipare approcci cooperativi di riduzione delle emissioni. Gli ITMOs sono un sistema per dare prezzo al carbonio (carbon pricing) simile al sistema di scambio delle emissioni del Protocollo di Kyoto. Non sono stati riscontrati problemi di natura commerciale riguardati il sistema di scambio delle emissioni anche se non è ancora stata fatta chiarezza circa la loro natura. Infatti, non è stato definito se abbiano natura di merci disciplinate dall'AGTC o siano servizi governati dall'Accordo Generale sul Commercio di Servizi. Il reale problema emergerebbe nel momento in cui dovessero nascere coalizioni di membri che adottano un sistema di carbon pricing che garantiscano un trattamento più favorevole di quello della *nazione più favorita* ai membri della coalizione. Infatti, essa verrebbe considerata una ingiusta discriminazione verso i paesi in via di sviluppo che non possiedono la tecnologia necessaria per allineare i loro standard ambientali a quelli

dei paesi industrializzati. Per quanto riguarda il SDM, esso potrebbe creare frizioni con l'ASMC. Infatti, quasi sicuramente gli interventi realizzati secondo il SDM verrebbero considerati sovvenzioni secondo l'ASMC. Tuttavia, data la vastità e la vocazione ad interventi sul sistema economico nazionale delle misure portate avanti dal SDM, come risultato esse perderebbe il requisito di specificità ad un'industria o gruppo di industrie e quindi non sarebbero sanzionabili. Contrariamente, è controverso stabilire se queste sovvenzioni siano all'interno della competenza dell'autorità che concede la sovvenzione. Infatti, i fondi destinati ai progetti del SDM in uno stato sono concessi da una parte diversa da quella che concede la sovvenzione. Tuttavia, è improbabile che i fondi siano destinati direttamente ai progetti, mentre è più verosimile che vengano diretti verso un governo nazionale che in seguito garantisce i finanziamenti. Secondo quest'ottica le sovvenzioni concesse dalle autorità preposte, sarebbero sanzionabili, quando elargite all'interno della propria area di competenza. L'ultima sezione tratta di due possibili soluzioni proposte dagli accademici per risolvere i conflitti che continuamente sorgono tra l'OMC e gli Accordi Multilaterali sull'Ambiente e che eventualmente possono applicarsi anche a conflitti con l'Accordo di Parigi. La prima possibilità è quella di definire per uno stato a quale trattato aderire nel caso in cui emerga un conflitto tra due diversi trattati internazionali che disciplinano la stessa materia. Qui si può fare affidamento alle norme di interpretazione fornite dalla Convenzione di Vienna sul Diritto dei Trattati del 1969. L'articolo 30, paragrafo 3 stabilisce l'adozione di un esame temporale secondo cui il trattato successivo dovrebbe sostituire quello precedente nei luoghi in cui le diverse norme entrano in conflitto. Tuttavia, un'applicazione alla lettera di questo esame eliminerebbe tutta la giurisprudenza in materia di diritto ambientale adottata prima del 1994, anno in cui è stata istituita l'OMC. Per ovvi motivi questo risultato non è auspicabile, quindi è preferibile intraprendere un altro tipo di analisi e definire quale tra i due trattati costituisce *lex specialis*. Secondo questa regola, il trattato più specifico dovrebbe prevalere su quello più generale, tuttavia diventa complicato definire se un trattato ambientale sia più specifico di uno sul commercio e viceversa. La seconda possibilità è quella di inserire all'interno delle regole di un'area di libero scambio delle clausole che proteggano le norme contenute negli Accordi Multilaterali sull'Ambiente. L'OMC stabilisce una sola deroga al principio della nazione più favorita ed essa è la creazione di un'area di libero scambio descritta dall'articolo XXIV dell'AGTC e l'articolo 5 dell'Accordo Generale sul Commercio di Servizi. Quest'ultima opzione è già stata messa in pratica nell'Accordo Nordamericano per il Libero Scambio. Infatti, l'articolo 104 stabilisce che se dovesse emergere una controversia tra l'accordo e altri tre Accordi Multilaterali sull'Ambiente, gli obblighi derivanti da questi ultimi dovrebbero prevalere.

In conclusione, la tesi ha dimostrato che l'Accordo di Parigi rappresenta un punto di svolta per il diritto internazionale dell'ambiente. Infatti, esso rappresenta il culmine di un processo portato avanti all'indomani dell'entrata in vigore del Protocollo di Kyoto per cui gli stati sono autonomi per quanto riguarda le proprie decisioni in materia di riduzione delle emissioni che vengono stabilite attraverso le

NDCs. In aggiunta, essi non riconoscono autorità superiori in grado di obbligarli e monitorarli, ma si affidano a sistemi di controllo orizzontali e alla trasparenza. Inoltre, l'Accordo supera la decennale suddivisione dei paesi per un approccio fondato più su obblighi morali e di responsabilità che su norme vincolanti. Il cambio epocale verso un'architettura dal basso verso l'alto è il risultato di un mutamento nelle dinamiche della comunità internazionale ed è probabile che questo cambio di paradigma sarà il punto di riferimento per accordi futuri. È stato inoltre spiegata la controversa e poco chiara relazione tra misure volte alla mitigazione e all'adattamento ai cambiamenti climatici e gli obblighi contenuti nell'OMC. Infatti, le discipline del diritto internazionale dell'ambiente e del commercio internazionale sono strettamente collegate difficili da conciliare date le loro finalità distinte e talvolta contrapposte. Per quanto concerne l'analisi delle misure contenute nell'Accordo di Parigi ed i trattati dall'OMC al momento attuale risulta difficile prevedere l'effetto che le NDCs avranno sul commercio internazionale. Inoltre, data la letteratura disponibile ed i precedenti casi giudiziari, questa tesi può solo delineare delle ipotesi per il futuro in attesa che gli organi giudiziari dell'OMC si pronuncino e comincino a fare chiarezza sulla questione.

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