

Department of Business and Management

Course of International Trade Law

**To What Extent WTO Can Advance Renewable Energy?
An Analysis of Disputes and Possible Reforms**

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Abstract

This research analyses the treatment of measures to support renewable energy within the regulatory framework of the World Trade Organisation (WTO) and the role the organisation can play in combating climate change. The existence of an incompatibility between such measures, which by their nature often have a discriminatory content, and WTO provisions is argued. The analysis of the legal framework and the disputes analysed show that it is not suited to provide the legal certainty that is fundamental to promoting the transition to renewables. The thesis advances some proposals for reforms in order to make the WTO more open and attentive to accommodating environmental concerns in its governance. The research is complemented by interviews with experts in the field who provides insightful comments on the current situation and development of case law. The main aim of the research is to advance options for the WTO to play a decisive role in energy transition and climate change mitigation.

Chapter I

Introduction

1.1 Aims and objectives of the thesis

Growing concerns about climate change and recent events involving Russia and Ukraine have brought the debate on energy back to the centre of the international forum. Indeed, energy is a necessary input for economic activity, and having access to a stable and affordable energy supply is crucial for the advancement of society and the economy.¹ It is more necessary than ever that it is also renewable and sustainable. Hence, the shift to renewable energy is key to decarbonisation of economies and in order to achieve effective results addressing global warming.²

Building on this reflection, this research aims to examine the role of the World Trade Organization (WTO) in promoting renewable energy through the analysis of case studies. The research methodology adopts a qualitative approach. The core of methodology is to conduct a series of interviews in order to better comprehend the contentious topics, progress the research, and advance potential solutions. Thus, after highlighting the critical issues affecting renewable energy governance, the aim is to formulate possible reforms of the WTO's energy legislative framework. Indeed, regulation of energy is fragmented and essentially incoherent³, and often this leads to a regulation that risks running counter to desirable results. It is

¹ *World Trade Organization website*. Energy services.

² Cottier, T. (2014). Renewable Energy and WTO Law: More Policy Space or Enhanced Disciplines? *Renewable Energy Law and Policy Review*, 5(1), 40–51.

³ Cottier, T., Malumfashi, G., Matteotti-Berkutova, S., Nartova, O., De Sépibus, J., & Bigdeli, S. (2011). Energy in WTO law and policy. In T. Cottier & P. Delimatsis (Eds.), *The Prospects of International Trade Regulation: From Fragmentation to Coherence* (pp. 211-244). Cambridge: Cambridge University Press.

therefore crucial to find a solution that can offer a coherent framework to deal with renewable energy related issue as climate change and carbon neutrality within the WTO itself.

The thesis proceeds as follows. Chapter II deals with the regulatory framework of the energy governance. First, it analyses how energy and environmental issues find their way into the WTO, examining the evolution of the conception of these subjects within the WTO framework over time. It shows how, at present, the energy sector is not taken into account in any WTO agreement, but there are only provisions that indirectly apply to it. Therefore, such provisions as the “Most-Favoured-Nation Treatment” (MFN) and “National Treatment” (NT) are explored. In addition, provisions that have proven to be particularly relevant for renewable energies, such as those contained in the Agreement on Trade-Related Investment Measures (TRIMs) or the Agreement on Subsidies and Countervailing Measures (SCM), will be analysed, in order to provide the reader with all the necessary tools to fully understand the case studies.

Chapter III presents the empirical analysis. Specifically, two cases of particular relevance in case law are addressed: *Canada – Renewable Energy/FIT* and *India – Solar Cells*. These two disputes, which in fact have the merit of having brought the relationship between the WTO and renewables to general attention, are therefore crucial to a full understanding of this relationship. These cases are useful in highlighting the limitations of the current WTO energy framework, and how it can limit rather than promote the development of renewable energies. Hence, in the analysis, special attention is given to how the energy regulatory framework has been applied and the jurisprudence that the resolutions of these disputes have generated. In order to better examine the complexities of these cases, it is carried out an interview with Dr Francesco Scalia, a legal expert who has gained experience with those disputes.

Drawing from this, Chapter IV discusses the limitations and weaknesses of the international energy law framework. It is argued that without a coherent regulation of the energy sector dealing directly and specifically with the matter, the subject cannot be dealt with effectively. Furthermore, in order to enrich the analysis and explore new solutions, this section presents two interviews with Professor Angelo Mario Taraborrelli, a leading expert on energy markets and energy policy, and Dr Elena Cima, a WTO expert who has largely deepened the treatment of support measures for renewable energy in the governance of the WTO. Indeed, it presents some reform ideas in light of this contribution.

Chapter V provides the main findings of the research.

1.2 Literature review

Investigating the relationship between renewable energy and the WTO, implies a recognition of the close link between international trade and climate change. In fact, the existence of this relationship is of fundamental importance for the validity of our analysis. The literature has covered this topic extensively from an economic, political, and legal perspective.

Some researchers⁴ have shown how the relationship between international trade and climate change is intrinsic to the characteristics of the latter. Given that the causes of climate change are a global phenomenon that necessitates international coordination of policies over nations with very different economic and political objectives, the sources of emissions are unevenly distributed across different nations. Thus, the consequences of climate change are likely to have quite varied geographic and national effects, and these factors all contribute to make climate change a global phenomenon. International trade, as demonstrated by Copeland and Taylor, impacts environmental quality by affecting the quantity and the variety of produced goods as well as the technologies employed⁵. As a result, trade openness can ease environmental strain if it encourages specialisation in green industries or the transfer of clean technologies, but it also increases overall economic activity, which adds to environmental problems⁶. As clarified by Jensen, the strengthening and transition to green industries and technologies is not directly linked to a reduction in emissions, given the increasing globalisation of markets⁷. The so-called “green paradox” has drawn a lot of interest as a carbon leakage mechanism. Leading nations’ climate policies increase consumption in other nations by reducing the need for fossil fuels and, consequently, their price on the global market⁸.

In addition to economic activities related to international trade that generate emissions and thus potentially affect the environment and cause climate change, there are important feedback effects of climate change on international trade⁹. These feedback effects are particularly important, as they represent the concrete impact of climate change on international trade and are therefore the real reason why the WTO should address climate change as a matter of urgency. Copeland and Taylor were pioneers in this, making it clear that pollution is not only harmful because consumers suffer the cost of disutility from pollution. But if pollution also affects productivity, then it can jeopardise long-term sustainability and reduce the competitiveness of environmentally sensitive industries¹⁰. This is for example the case in the agricultural industry¹¹. Moreover, changes in temperature and sea level could negatively or positively affect transport methods and the supply and distribution chains on which international trade is based¹².

The relationship between international trade and climate change, in all its implications, seems to be definitively recognised and at the top of the international system’s priorities. Climate change has been deemed a significant danger to future growth and prosperity by the WTO because of the possibility of lost productivity,

⁴ Chen, X., Woodland, A. (2013). International trade and climate change. *Int Tax Public Finance* 20, 381–413.

⁵ Copeland, B. R., & Taylor, M. S. (1995). ‘Trade and Transboundary Pollution’. *American Economic Review*, 85 (4), 716–737.

⁶ *Ibid.*

⁷ Jensen, S., Mohlin, K., Pittel, K., & Sterner, T. (2015). ‘An Introduction to the Green Paradox: The Unintended Consequences of Climate Policies’. *Review of Environmental Economics and Policy*, 9 (2), 246–265.

⁸ *Ibid.*

⁹ Chen, X., Woodland, A. (2013). International trade and climate change. *Int Tax Public Finance* 20, 381–413.

¹⁰ Copeland, B. R., & Taylor, M. S. (1999). Trade, spatial separation, and the environment. *Journal of International Economics*, 47(1), 137–168.

¹¹ Deschenes, O., & Greenstone, M. (2007). The economic impacts of climate change: evidence from agricultural output and random fluctuations in weather. *American Economic Review*, 97(1) 354–385.

¹² WTO (2009). *World trade report 2009: trade in a globalizing world*. WTO, Geneva.

production shortages, damaged transportation infrastructure, and supply chain disruptions. Furthermore, many nations' comparative advantages are projected to change without large reductions in global greenhouse gas (GHG) emissions, with the agricultural, tourism, and certain manufacturing sectors being particularly susceptible to the effects of climate change¹³. Logically, the WTO emphasises that international cooperation on the trade aspects of climate policy is crucial to make climate action more effective and the low-carbon transition fairer, while minimising trade friction and investor uncertainty¹⁴. The crucial role that international organisation, and the WTO in particular, can play in combating climate change and in the transition to renewable energy, is an accepted instance in this research and has a solid foundation in the literature. In fact, some academics have argued that, because of the complex interrelationships between different policy areas, trade agreements can be seen as important building blocks of polycentric climate governance and for a 'regime complex' for climate change¹⁵.

In this regard, a controversial debate regards the compatibility of measures to combat climate change and promote renewable energy with international trade law. Some authors¹⁶ argue that there may be full compatibility between the WTO regime and incentive measures of renewable energy as subsidies and border tax adjustments (BTAs) if correctly designed and implemented. On the other hand, it has been noted how in recent years renewable energy subsidies have become a major source of trade disputes in the WTO: since the first one started in 2010, there have been as many as six until 2014 alone.¹⁷ If one looks at the role with which the WTO was conceived, namely that of the ultimate guarantor of free international trade, it is easy to see why: ensuring free trade does not only mean promoting it but also, as some commentators note¹⁸, setting strict requirements for the treatment of domestic and international producers equally, and restrict the degree to which imports from various trading partners can be treated differently. It is therefore clear, how these restrictions, which are essential for the creation and maintenance of a free market, can conflict with measures to support renewable energy, especially in the absence of specific exceptions aimed at environmental protection. As Asmelash suggests¹⁹, this is the case with local content requirements (LCRs), measures that are in themselves discriminatory, but which can be crucial for the development of a domestic renewable

¹³ WTO (2022). World trade report 2022: climate change and international trade. WTO, Geneva.

¹⁴ *Ibidem*.

¹⁵ Keohane, R. O., & Victor, D. G. (2011). 'The Regime Complex for Climate Change. Perspectives on Politics'. *Perspectives on Politics*, 9 (1) 7–23.

¹⁶ Horn, H. & Mavroidis, P. (2011). To B(TA) or not to B(TA)? On the Legality and Desirability of Border Tax Adjustments from a Trade Perspective. *The World Economy*. 34. 1911-1937.

¹⁷ Birhanu Asmelash, H. (2014). Energy Subsidies and WTO Dispute Settlement: Why Only Renewable Energy Subsidies Are Challenged, *Journal of International Economic Law*, Volume 18, Issue 2, June 2015, Pages 261–285.

¹⁸ Cosbey, A., Droege, S., Fischer, C., & Munnings, C. (2019). 'Developing Guidance for Implementing Border Carbon Adjustments: Lessons, Cautions, and Research Needs From the Literature. *Review of Environmental Economics and Policy*, 13 (1), 3–22.

¹⁹ Asmelash, H. (2022). The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures: Has the Dust Settled Yet? *World Trade Review*, 21(4), 455-478.

energy production system. Hence, Chapter II analyses these provisions within the WTO framework, Chapter III examines their application in real cases, and Chapter IV addresses their limitations.

Finally, the literature has marginally questioned why the WTO has not, in practice, played an important role in the energy transition so far and has tried to put forward possible solutions. In order to successfully address the widespread concern of global warming, researchers such as Cottier called on the necessity to address these difficulties in the sectoral negotiations on renewable energy under the auspices of the WTO²⁰. However, the history of negotiations within the WTO has taught that their success is far from obvious, without considering the enormous amount of time they require, given the difficulty in finding a compromise between the needs of different countries. For instance, some analysts have noted that many developing countries are reluctant to pursue negotiations since they would not directly gain from trade in green products²¹.

Thus, it is now clear from the literature that international trade can play a key role in both worsening and combating climate change. Specifically, the WTO has a key role to play in promoting more sustainable trade, in particular by favouring green products and promoting the development of renewable energy. However, it seems equally clear that the WTO, despite slowly becoming more open to environmental concerns, is still far from effectively asserting the dominance of such concerns over the protection of free trade²². This is leading to situations where provisions aimed at favouring the development of renewable energies are judged discriminatory and therefore inadmissible, disregarding the current climate crisis, which should instead be a top priority. Negotiating an environmental agreement would certainly be the preferable solution, but it would be difficult to do so given the long time it would take, whereas a rapid response is absolutely necessary. Therefore, in Chapter IV, we will draw on the above-mentioned contributions and put forward our proposals for reform.

1.3 *Methodology of the research*

In this study, the approach adopted is qualitative, and consists of a theoretical, an empirical, and a critical part. The theoretical section, comprising Chapter I and Chapter II, is a fundamental building block and the necessary starting point for a proper understanding of this work. Indeed, in order to explore the existing literature on the topic and to analyse the regulatory framework, the research work carried out is theoretical and secondary. The focus is on secondary research because it allows us to reuse and expand on already published resources like research papers and journal articles.

²⁰ Cottier, T. (2014). Renewable Energy and WTO Law: More Policy Space or Enhanced Disciplines? *Renewable Energy Law and Policy Review*, 5(1), 40–51.

²¹ Wu, M. (2014). ‘Why Developing Countries Won’t Negotiate: The Case of the WTO Environmental Goods Agreement’. *Trade, Law and Development*, 6 (1), 93.

²² D. Farah P., Cima E. (2013). Energy Trade and the WTO: Implications for Renewable Energy and the OPEC Cartel, *Journal of International Economic Law*, Volume 16, Issue 3, 707–740.

Chapter III contains the empirical section of this work. As a matter of fact, the purpose of this chapter is to analyse some of the most important renewable energy disputes within the WTO framework in order to understand the role that the WTO is actually playing in promoting or not promoting renewables. In this case, primary research is carried out alongside secondary research. Therefore, these disputes will not only be analysed on the basis of what happened and what has already been written by various commentators but also in the light of the interview conducted with Dr Scalia. Gathering expert advice is crucial to better understand not only the complexities of the cases at hand but also to explore the impact and repercussions of resolving such disputes on the WTO's governance of renewables.

Finally, Chapter IV critically discusses the empirical evidence that has emerged so far. With the contribution, through interviews conducted, of two other energy and international organisations experts, namely Professor Angelo Mario Taraborrelli and Dr Elena Cima, the criticalities and limitations of the WTO's current commitment to renewables are analysed, and then some specific reform suggestions are advanced.

What emerges is the experimental nature of this research since it tries to provide novel findings. In fact, our starting point will be the decision to challenge measures in support of renewable energies in the two disputes *Canada – Renewable Energy/FIT* and *India – Solar Cells* as non-compliant with WTO rules. Then, this part provides a remedy, namely to reform certain points of WTO legislation and practices in such a way that measures allowing a rapid response to climate change can be adopted more quickly without being incompatible with the Organisation. The research advances some proposals for reform along the doctrinal debate and recent regulatory developments.

1.4 Background of the research

The usefulness of trade measures in the pursuit of non-economic goals has long been acknowledged by the international trade system, at least from the point of view of the design statements of the legislative framework. As far as the WTO is concerned, the Marrakesh Agreement²³, which gave birth to the Organisation as we know it today, effectively brought the environment into its ambit. The Agreement, in its preamble, clearly states that the relations among the parties of the Agreement in the field of trade and economics should be conducted “allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment”²⁴. Now, since 1994, when the agreement was signed, the scenario has evolved rapidly, so much so that nations and the international community have made environmental protection and the fight against climate change urgent and fundamental objectives to pursue. A striking example of this new awareness is the Paris Agreement adopted in December 2015 at the annual gathering of parties to the United Nations Framework Convention on Climate

²³ WTO Agreement: Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 1867 U.N.T.S. 154, 33 I.L.M. 1144 (1994).

²⁴ Ibid.

Change. This Agreement, with its stated goal of limiting the increase in global average temperature to ‘well below’ 2 degrees Celsius compared to pre-industrial levels, represents a major achievement, the first that obliges all parties to make a serious commitment to tackle climate change²⁵.

The logical outcome of this process is that, to hasten the transition to renewable energy sources motivated by energy security and climate change, nations throughout the world have implemented a wide range of legislative and policy measures. Nowadays, support policies for renewable energy exist in almost every nation²⁶. These encouragement programmes have been crucial to the advancement and use of renewable energy technology²⁷.

Given the large number of these support measures, they have been a core of contention within the Dispute Settlement Body (DSB) of the WTO. In particular, the most salient dispute is that concerning a feed-in tariff programme for wind and photovoltaic energy in the Canadian province of Ontario. Japan and the European Union argued that the Canadian programme incorporated a prohibited subsidy under the SCM Agreement, as it represented both a direct transfer of funds to the beneficiary companies and the purchase of the energy they produced, and TRIMs, as it contained a domestic content requirement, requiring the purchase of a certain percentage of domestic products²⁸. We will analyse this case in depth in Chapter III, but here it is important to emphasise that this controversy has brought to attention the compatibility of renewable energy incentive schemes with the WTO system. Indeed, from it and other disputes, the WTO’s difficulty in expressing itself and regulating a sector such as renewables and, more generally, energy itself, clearly emerges. In the absence of the right tools to do so, the answers given in the dispute settlement have raised more questions than solutions. It has been argued that the policy space created by the Appellate Body in its resolutions seals the relationship between the market and environmental protection in the WTO system, which would not only not be in conflict but could also be an instrument of it²⁹. However, what remains certain is that these first ten years of litigation have brought neither finality nor certainty³⁰.

The international legal framework controlling one of the most popular policy tools to aid in accelerating the energy transition has to be made clear and definite in light of the climate change challenge. Without legislative change, a dispute resolution system facing an existential crisis will decide whether or not support measures for renewable energy are legitimate under WTO rules³¹. However, such legislative reforms seem so far very unlikely and difficult to achieve despite the international community’s continuous efforts to tackle

²⁵ Horowitz, C. (2016). Paris Agreement. *International Legal Materials*, 55(4), 740-755.

²⁶ REN21 (2021). *Renewables 2020 Global Status Report*. REN21, Paris.

²⁷ Nicolini M., Tavoni M. (2017). Are renewable energy subsidies effective? Evidence from Europe. *Renewable and Sustainable Energy Reviews*, 412-423.

²⁸ Scalia F. (2022). La compatibilità dei regimi incentivanti l’energia sostenibile con il sistema WTO. *Revista da Faculdade de Direito UFPR, Curitiba*, v. 66, n. 3, 97-151.

²⁹ *Ibid.*

³⁰ Asmelash, H. (2022). The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures: Has the Dust Settled Yet? *World Trade Review*, 21(4), 455-478.

³¹ *Ibid.*

climate change and promote the development of renewable energy. There is increasing attention and awareness also from the WTO itself, which has dedicated its World Trade Report 2022 to the relationship between climate change and international trade, but concrete answers are slow in coming.

The Doha Round, the latest round of trade negotiations among the WTO members officially launched in 2001, was also to take up the debate on the treatment of the energy sector within the Organisation and measures to support green and sustainable goods. However, the round never ended, and no significant progress was made in the multilateral negotiations for at least a decade³².

³² Tajoli, L. (2019). Le guerre dei dazi: verso la fine della Wto? 65-76.

Chapter II

The Regulatory Framework

2.1 Background of the World Trade Organization

This chapter aims to illustrate the architecture of the WTO, its purpose, and its functioning, in order to analyse the far from simple relationship between the Organisation and the regulation of the energy sector. Indeed, before going into the details of energy regulation and the relevant provisions, it is necessary to understand what this Organisation is and how it works.

Although the WTO was formally founded in 1995, its trade system dates back more than fifty years. The General Agreement on Tariffs and Trade (GATT), which was established in 1948, has set the system's guidelines. The General Agreement quickly established a de facto international body known as GATT. GATT has changed throughout time as a result of several rounds of negotiations. The Uruguay Round, which took place between 1986 and 1994 and resulted in the establishment of the WTO, was the final and most significant GATT round.³³ A new General Agreement on Tariffs and Trade (GATT 1994) was signed, but the regulation aims expanded into services and intellectual property rights too, with two more agreements under the WTO umbrella: The General Agreement on Trade in Services (GATS) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). Hence, there are several differences between the GATT and the WTO. The first of these is that GATT was a temporary agreement, whereas the WTO is an organisation set up to last. The second is the number of issues subject to WTO regulation, which is greater than what GATT dealt with. A further difference is the number of member countries, initially 23 under GATT and currently 164 under WTO.³⁴

The mission of the WTO is undoubtedly one of promoting economic efficiency through the enhancement of trade liberalization and a multilateral trading system, which should be comprehensive of the whole economic community. The WTO agreements, since the complexity of the area it proposes to regulate, are extremely lengthy and intricate. Despite this, all along the documents, there are a series of fundamental principles, which represent the cornerstones of the entire WTO environment. The essential and more relevant principle is the 'trade without discrimination' in its two declinations: the so-called National Treatment, which means treating foreign and local goods, services as well as intellectual property rights equally, and the Most Favoured Nation Treatment.³⁵ The Most Favoured Nation principle "obliges Members, which are bounded by the rule, to accord the most favourable tariff and regulatory treatment given to the product of any one

³³ World Trade Organization (2015). Understanding The WTO. WTO, Geneva.

³⁴ *World Trade Organization Website*. WTO Membership.

³⁵ World Trade Organization (2015). Understanding The WTO. WTO, Geneva.

member at the time of import or export of ‘like products’ to all other members’”.³⁶ In other words, this obligation prohibits horizontal discrimination³⁷: countries may not discriminate among their trading partners. We could say that this principle basically constitutes the Organisation itself, as without it would be almost impossible for the free market to operate efficiently and for trade to be liberalised. The only type of trade protectionism that is permitted is import duties on foreign goods. However, the long-term goal of the WTO is to guarantee that tariffs are as low as possible or, ideally, removed entirely, despite the fact that they are not technically prohibited under WTO regulations. Along with the principle of trade without discrimination, the other principles guiding the work of the WTO are to make international trade increasingly free, gradually and through negotiations within the organisation; to ensure the predictability of trade flows, through rules that are binding and as transparent as possible; to promote fair competition; and to encourage the economic development of countries and economic reforms.³⁸

The WTO is the most important global platform regulating the international trade flow in its main sectors. From this, it follows that all the countries, which are involved or not in the Organization, must comply with its standards, norms, and principles. Since the WTO is an institution able to produce hard law rules and it can count on an internal enforcement mechanism. States must assure their compliance and resolve disputes through the Dispute Settlement Mechanism (DSM). In this sense, the WTO agreements set out justiciable law and procedures which configures it as an international legal contract.³⁹

In case of a violation that leads to a dispute with two or more states, the Mechanism moves into action. Firstly, the Dispute Settlement Body (DSB) tries to make the parties involved negotiate friendly. Then, if no solution is found, a special Panel intervenes and expresses its opinion on how to resolve the disagreement. At this point, if the dispute remains unresolved, the parties may appeal to the Appellate Body, which shall take a binding decision on the matter. In particular, as we will see during the empirical analysis, this dispute resolution system has a fundamental role within the WTO legislative framework. Especially the Appellate Body, whose authority, since the establishment of the organization, has grown rapidly and become particularly extensive.⁴⁰ In fact, given the complexity and the many areas that the WTO agreements regulate, the Appellate Body in the resolution of disputes interprets these provisions, evolving, updating the doctrine, and creating policy space. The Appellate Body historically played a vital role in preserving policy space for

³⁶ Weiler J.H.H., Cho S., Feichtner I., Arato J. (2017). *International and Regional Trade Law: The Law of the World Trade Organization*.

³⁷ *Ibid.*

³⁸ World Trade Organization (2015). *Understanding The WTO*. WTO, Geneva.

³⁹ Low, P. (2015). *Strengthening the Global Trade and Investment System for Sustainable Development*, 12.

⁴⁰ Shaffer G. et al. (2016). *The Extensive (But Fragile) Authority of the WTO Appellate Body*, *Law and Contemporary Problems*, 237-273.

non-trade public policy as environmental protection, and its active role has helped to fill the gap left by the deadlock in multilateral trade negotiations.⁴¹

Finally, although the principles and provisions of the Organisation are binding and particularly stringent, there are some exceptions within the legislative framework that derogate from these rules. Particularly relevant are the exceptions contained in Article XX GATT which can be used by WTO Members to introduce measures in pursuit of certain policy objectives that otherwise would have been WTO-inconsistent. The burden of proof, however, lies with the party invoking these exceptions, which are subjected to meticulous and stringent scrutiny before being accepted.⁴²

2.2 The Relationship between energy and WTO

When the GATT rules were negotiated, the energy demand was much lower than it is today, and so were energy prices.⁴³ In trade liberalisation, energy was not a political priority at the time, despite the fact that energy has always been an important component in geopolitics.⁴⁴ State monopolies dominated much of the economy, and a strict geographical division served as its primary form of regulation. Energy resources and goods were heavily cartelized, monopolised, and controlled by a small number of multinational corporations in international commerce⁴⁵. This explains why energy is not treated as a separate industry under GATT or WTO standards. It was believed that generic laws, such as state trade regulations, could effectively regulate the energy trade.

As a matter of fact, there was originally a perception that the GATT provisions did not apply to trade in energy at all. This perception was mostly caused by the fact that, up until the 1980s, the majority of nations producing energy were not yet GATT contracting parties.⁴⁶ This is understandable, especially in the case of developing countries rich in energy resources, whose principal export goods did not find any obstacles to market access on global marketplaces. However, GATT participation would have compelled them to sign several enforceable contracts and open their domestic markets. Nations whose primary export, and occasionally their only significant export, was energy had little motivation to abide by such demands⁴⁷.

⁴¹ Asmelash, H. (2022). The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures: Has the Dust Settled Yet? *World Trade Review*, 21(4), 455-478.

⁴² Selivanova, J. (2007). *The WTO and Energy: WTO Rules and Agreements of Relevance to the Energy Sector*, ICTSD Trade and Sustainable Energy Series Issue Paper No. 1, International Centre for Trade and Sustainable Development, Geneva, Switzerland.

⁴³ Adelman, M. A. (2002). World oil production & prices 1947-2000, *The Quarterly Review of Economics and Finance*, 170.

⁴⁴ Cottier, T., Malumfashi, G., Matteotti-Berkutova, S., Nartova, O., De Sépibus, J., & Bigdeli, S. (2011). Energy in WTO law and policy. In T. Cottier & P. Delimatsis (Eds.), *The Prospects of International Trade Regulation: From Fragmentation to Coherence*, 211-244.

⁴⁵ *Ibid.*

⁴⁶ Selivanova, J. (2007). *The WTO and Energy: WTO Rules and Agreements of Relevance to the Energy Sector*, ICTSD Trade and Sustainable Energy Series Issue Paper No. 1, International Centre for Trade and Sustainable Development, Geneva, Switzerland.

⁴⁷ *Ibid.*

With the advent of industrialization, energy-rich nations created downstream sectors, many of which relied on the utilisation of energy inputs during the manufacturing process. Then, these nations had greater reasons to take part in multilateral trade agreements. While there were no barriers to getting energy to export markets, this was not true for downstream items. Market access problems became a concern for energy-endowed countries⁴⁸. The difficulties surrounding energy trade become more pressing when several major global energy and petroleum producers joined the GATT and the WTO. During the Tokyo and Uruguay Rounds of the WTO, members discussed concerns relating to the energy policy of exporting nations. Dual pricing techniques, the consequent subsidies, reverse dumping, export limits and tariffs, and challenges with natural resource product replacement by substitutes were a few of the topics covered. A deal to establish detailed guidelines on these concerns was not achievable due to the opposition of resource-rich nations⁴⁹.

However, it is now widely acknowledged that energy products are subject to the same WTO rules. Since basic WTO rules are applicable to all forms of trade, they also apply to trade in energy goods and services, and this clearly also applies to renewables. In short, the provisions of the WTO apply to the energy sector, treating it in exactly the same way as all other matters regulated by the Organisation, despite the fact that it is clear that energy has special characteristics and strategic importance from other forms of international trade.

Energy goods, to mention a few, have unusual physical properties that affect how they are stored, transported, and distributed. Additionally, natural monopolies and the dominance of state-owned firms in various national energy markets present unique obstacles. Moreover, the recent Russian invasion of Ukraine on 24 February 2022 reminded the international community and individual states of the risks of excessive energy interdependence and the imperative need to develop an energy sector that is as autonomous, secure and safe from any potential external interference as possible, triggering a frenetic race to upgrade and renew the various national energy sectors. Finally, as has been made abundantly clear, energy plays a key role in the relationship between international trade and climate change. All these issues give a good idea of the challenges involved in regulating a sector such as energy, especially when it comes to doing so within the framework of the WTO, which was by no means designed with the intention of regulating this sector and therefore does so in a fragmented way⁵⁰.

As an illustration of this, at present, all goods that are traded in the international market, and thus fall under the jurisdiction of the WTO, such as energy products and commodities, are registered and classified in the Harmonised Commodity Description and Coding System (HS) operated by the World Customs Organisation, as raw materials, semi-finished goods or finished products⁵¹. Currently, energy goods, both renewable and

⁴⁸ Ibid.

⁴⁹ Ibid.

⁵⁰ Marhold, A. (2021). *Energy in International Trade Law: Concepts, Regulation and Changing Markets* (Cambridge International Trade and Economic Law). Cambridge: Cambridge University Press.

⁵¹ International Convention on the Harmonized Commodity Description and Coding System (HS Convention), entered into force on 1 January 1988.

non-renewable, and energy-related equipment are located in different parts of the HS Convention. They are in different product categories and are not grouped under one energy heading. For traditional energy resources, the main categories of importance in the HS Convention are nuclear energy, coal, natural gas, oil and petroleum products, electricity as well and wood as fuel⁵².

The fact that energy has been treated in the same way as all other goods in the agreements, and the general fragmentation of regulation that this implies, has left many questions unanswered. For example, on the variables defining the concept of like products when it comes to non-discrimination, or whether fossil fuels and renewables should be treated equally. Moreover, since the word ‘energy’ does not appear a single time in the agreements of the WTO framework, there is still no legal definition of energy and, consequently, no definition of trade in energy goods and services as far as GATT and GATS are concerned. There are also questions over whether energy should be defined as a good, that is covered by the GATT, or a service, that is covered by the GATS, and this distinction shouldn’t be taken lightly because the treatment under the two agreements is very different.⁵³ Additionally, due to their complexity, many energy sources also involve features of trade in both products and services.

The Doha Round attempted to address these issues, reaffirming the fundamental role that the WTO had to play in energy governance. Former WTO secretary-general Pascal Lamy makes this very clear: “When thinking about how the WTO can most effectively contribute to the energy goals of the international community, the question is not whether the WTO legal framework is relevant and applicable to trade in energy goods and services, for it clearly is. Instead, we need to ask ourselves how the WTO’s contribution can be further improved, given rapid changes in the energy policy landscape and the international community’s goals regarding energy”⁵⁴. Energy issues motivate discussions on export taxes and export restrictions on raw materials. Another part of the ongoing round of negotiations is a balance between the promotion of environmental goods and services and fossil fuel subsidies⁵⁵. Finally, energy related negotiations in the current round focus on biofuels and subsidisation of renewables, stressing the need for balance between climate change and energy security concerns on one hand, and their impact in order to avoid new environmental problems. However, as already mentioned, the negotiations on the basis of the Doha Development Agenda are completely stalled and almost to be considered de facto over, with no concrete steps forward made regarding the regulation of the energy field. Yet the Doha Round saw the energy sector being

⁵² Marhold, A. (2021). *Energy in International Trade Law: Concepts, Regulation and Changing Markets* (Cambridge International Trade and Economic Law). Cambridge: Cambridge University Press.

⁵³ D. Farah P., Cima E. (2013). *Energy Trade and the WTO: Implications for Renewable Energy and the OPEC Cartel*, *Journal of International Economic Law*, Volume 16, Issue 3, 707–740.

⁵⁴ Lamy, P. (2011) ‘Trade and Energy: The Case for a Greater WTO Role’ in *The Geneva Consensus: Making Trade Work for All*, 121.

⁵⁵ Cottier, T., Malumfashi, G., Matteotti-Berkutova, S., Nartova, O., De Sépibus, J., & Bigdeli, S. (2011). *Energy in WTO law and policy*. In T. Cottier & P. Delimatsis (Eds.), *The Prospects of International Trade Regulation: From Fragmentation to Coherence* 211-244.

discussed for the first time as a specific service sector, demonstrating how energy regulation has been definitively and officially embraced by the WTO⁵⁶. Having provided the necessary context and clarification, it is now time for a closer look at the WTO provisions relevant to energy.

2.3 WTO legal framework relevant to energy

2.3.1 The GATT rules

The GATT regulates international trade of goods. It therefore also applies to trade in energy when it includes goods. For example, it is not only relevant when considering energy itself as a good, but for the purposes of empirical analysis, it is relevant when dealing with measures that have an impact on trade in components for the construction or implementation of energy production systems, in this case, renewable energy.

As pointed out, the principle of non-discrimination concerns the entire WTO framework; however, it is in the GATT that it is present in its highest expression. In particular, it has an extremely prominent position: Article I regulates the Most Favoured Nation Treatment, whereas Article III concerns the National Treatment⁵⁷. In a very plain form, Article I:1 GATT⁵⁸ declares that any advantage, favour, privilege, or immunity granted by a contracting party shall be extended to the like products of other contracting parties “immediately and unconditionally”⁵⁹. Article III:2 GATT, on the other hand, requires that when goods enter the territory of another WTO member, they may not be treated less favourably than ‘like’ domestic products⁶⁰.

Article III:8(a) GATT, however, poses the important exception of government procurement. It excludes the application of the rules, regulations or requirements concerning the procurement by government agencies of products purchased for government purposes and thus not intended for commercial sale or production of goods for trade. In addition, exclusive subsidies are also allowed only for domestic producers, provided there is no violation of the other provisions of Article III and the SCM Agreement.

In addition, Article II GATT allows WTO members to discriminate, but only if this is done through the use of bound tariff rates, whereas the imposition of any quantitative restriction on the import or export of a

⁵⁶ Marhold, A. (2021). *Energy in International Trade Law: Concepts, Regulation and Changing Markets* (Cambridge International Trade and Economic Law). Cambridge: Cambridge University Press.

⁵⁷ Gowa, J., & Hicks, R. (2012). The most-favored nation rule in principle and practice: Discrimination in the GATT. *The Review of International Organizations*, 7(3), 247-266.

⁵⁸ General Agreement on Tariffs and Trade, *Article I:1*. With respect to customs duties and charges of any kind imposed on or in connection with importation or exportation or imposed on the international transfer of payments for imports or exports, and with respect to the method of levying such duties and charges, and with respect to all rules and formalities in connection with importation and exportation, and with respect to all matters referred to in paragraphs 2 and 4 of Article III, any advantage, favour, privilege or immunity granted by any contracting party to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the like product originating in or destined for the territories of all other contracting parties.

⁵⁹ Weiler J.H.H., Cho S., Feichtner I., Arato J. (2017). *International and Regional Trade Law: The Law of the World Trade Organization*.

⁶⁰ General Agreement on Tariffs and Trade, *Article III:2*. The products of the territory of any contracting party imported into the territory of any other contracting party shall not be subject, directly or indirectly, to internal taxes or other internal charges of any kind in excess of those applied, directly or indirectly, to like domestic products. Moreover, no contracting party shall otherwise apply internal taxes or other internal charges to imported or domestic products in a manner contrary to the principles set forth in paragraph 1.

given product is expressly forbidden by Article XI GATT, as these are considered not only more detrimental to free trade, but also less transparent.

A controversial, but crucial, point concerns the definition of ‘like product’. As a matter of fact, discrimination is illegal as far as the two products are ‘like’. Since the admissibility or not of tariffs, or of discriminatory behaviours, closely depends on whether they are similar products, a strict or a loose interpretation of the term ‘like product’ may have a decisive impact on the jurisdiction and regulation of the principle. The likeness is generally judged based on: (1) the properties, nature, and quality of the products; (2) the end-uses of the products; (3) consumers’ tastes and habits; and (4) the tariff classification of the products⁶¹. Thus, two products are ‘like’ if they are directly competitive or substitutable with each other. An interpretation of the concept was given in the *Spruce, Pine, and Fir* case involving Canada and Japan. The panel, in that instance, strictly interpreted the notion and recognized that each WTO Member might have a lot of leeway when it came to tariff classifications, and the validity of such classifications would be determined by whether or not they discriminated against the same products from different WTO members⁶².

When it comes to energy, the concept of like products is fundamental, and many questions are still unanswered. For example, should we consider energy produced from renewable sources a like product to that produced instead from fossil fuels and therefore particularly polluting? In fact, the result would be the same, we would still be dealing with two sources of energy, perfectly substitutable for each other. This would create the paradoxical result of having to treat renewable energies in the same way as polluting energies, preventing the latter from being discriminated against in favour of the former, and consequently hindering the energy transition and thus the effort to fight climate change. When examining two tradeable goods to verify the likeness, it is still to be discussed whether the processes and methods of production, in this case, methods with a different degree of environmental impact, which are not a component of the physical qualities of a product can be taken into account. The question is how much emissions generated in order to produce a given good must count as a decisive element. And if the criteria that are not related to the products can be considered as an attribute of the product that makes the articles that are ‘like’ ‘unlike’ in the sense of GATT⁶³. We will address how WTO jurisprudence has faced this issue by analysing the *Canada – Renewable Energy/FIT* dispute.

Despite the GATT requires the parties to the agreement to fully comply with its provisions, some deviations from them can be justified on the basis of the general exceptions contained in Article XX GATT. These exceptions represent special and exceptional cases in which deviations can also be made from the basic

⁶¹ Marhold, A. (2021). *Energy in International Trade Law: Concepts, Regulation and Changing Markets* (Cambridge International Trade and Economic Law). Cambridge: Cambridge University Press.

⁶² Part II Chapter I Most-Favored-Nation Principle, Overview of Rules.

⁶³ Marceau, G. (2010). *The WTO in the Emerging Energy Governance Debate. Global Challenges at the Intersection of Trade, Energy and Environment*.

principles of the Agreement. For this reason, and to avoid abuse by members, those who justify treaty violations on the basis of Article XX GATT in dispute must pass strict scrutiny, in particular, that posed by the chapeau of the article itself: “Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures”⁶⁴. The obvious rationale behind this provision is to prevent such exceptions from being used for deliberately discriminatory purposes.

Among the various exceptions that Article XX GATT poses, we find particularly relevant for the energy and renewables sector those explicitly stated in (b) and (g). This does not exclude that deviations concerning energy issues can be justified by recourse to any of the other exceptions. Article XX(b) GATT states that measures “necessary to protect human, animal or plant life or health”⁶⁵ may derogate from the general rules. This provision requires passing the so-called ‘necessity test’ in order to be properly activated, i.e., that the measures are really necessary for the protection of human, animal and plant life and health. A broad interpretation of this paragraph would provide the ideal mechanism to make admissible, for example, all those measures, starting with those promoting renewable energy, that are intended to counter climate change but are non-compliant. Undoubtedly, climate change poses a threat to human, animal, and plant health and life, and measures to counter it are necessary more than ever. However, in the WTO jurisprudence, the interpretation given to this rule is still very rigid, although some progress has been made. Initially, measures were considered necessary “only if there were no alternative measures consistent with the GATT, or less inconsistent with it”⁶⁶, through the application of a ‘least-trade restrictive’ requirement. Subsequently, this requirement was partly tempered by the inclusion of a process of “weighing and balancing a series of factors”⁶⁷, which introduced a judgment of proportionality.

Article XX(g) GATT is relevant when dealing with energy and renewables because it refers to measures “relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption”⁶⁸. The expression ‘exhaustible natural resources’ refers to a wide range of resources from minerals and raw materials to fish stocks and clean air⁶⁹. There is little doubt that this paragraph refers to fossil fuels as they are by definition natural resources at risk

⁶⁴ General Agreement on Tariffs and Trade, *Article XX. General Exceptions*.

⁶⁵ *Ibid.*

⁶⁶ Panel Report, Thailand – Restrictions on the Importation of and Internal Taxes on Cigarettes (Thailand – Cigarettes), adopted 7 November 1990.

⁶⁷ WTO Appellate Body Report, Brazil – Measures Affecting Imports of Retreaded Tyres (Brazil - Retreaded Tyres), adopted 17 December 2007.

⁶⁸ General Agreement on Tariffs and Trade, *Article XX. General Exceptions*.

⁶⁹ Marhold, A. (2021). *Energy in International Trade Law: Concepts, Regulation and Changing Markets* (Cambridge International Trade and Economic Law). Cambridge: Cambridge University Press.

of depletion. However, even in this case, interpreting the rule more broadly would make it possible to use it to allow measures in favour of renewable sources, considering, for example, clean air or the entire environment as an exhaustible natural resource. Article XX(g) GATT, however, also poses strict requirements if it is to be invoked. First of all, in order to prevent this exception from being invoked for the mere purpose of discriminating against third parties, the measures in question may not only impose restrictions on imported products but must also necessarily apply to domestic ones. Moreover, the WTO case law in the *US - Gasoline* dispute made it clear that measures intended to be justified in light of paragraph (g), in order to be considered ‘related’ must show a ‘substantial relationship’ with the protection of exhaustible natural resources and cannot merely be ‘incidentally or inadvertently aimed’ at doing so.⁷⁰

Finally, it is also important to briefly mention what is contained in Article XXI GATT. It puts in place the so-called security exceptions: “Nothing in this Agreement shall be construed to (a) require any contracting party to furnish any information the disclosure of which it considers contrary to its essential security interests or (b) to prevent any contracting party from taking any action which it considers necessary for the protection of its essential security interests”⁷¹. Indeed, very often the security policies of individual states are closely linked to energy policies. Once again, it is worth recalling how the Russian-Ukrainian conflict has violently revived the issue of energy security, which is therefore taking the form of a race towards energy autonomy, including through renewable sources. The more the energy question becomes an internal state question, the more it becomes a security question. Thus, it seems reasonable to say that the exceptions contained in Article XXI are destined to play a key role in energy governance, especially if they have already been used by states for decades to justify conduct contrary to the GATT.

2.3.2 *The SCM Agreement*

The Agreement on Subsidies and Countervailing Measures is at the core of the WTO rule on subsidies. The agreement expands and regulates the matter by elaborating on Articles VI⁷² and XVI⁷³ GATT.

⁷⁰ WTO Panel Report, *US – Gasoline*, adopted 29 January 1996.

⁷¹ General Agreement on Tariffs and Trade, *Article XXI*. Security Exceptions.

⁷² General Agreement on Tariffs and Trade, *Article VI*. Anti-dumping and Countervailing Duties. The contracting parties recognize that dumping, by which products of one country are introduced into the commerce of another country at less than the normal value of the products, is to be condemned if it causes or threatens material injury to an established industry in the territory of a contracting party or materially retards the establishment of a domestic industry [...].

⁷³ General Agreement on Tariffs and Trade, *Article XVI*. If any contracting party grants or maintains any subsidy, including any form of income or price support, which operates directly or indirectly to increase exports of any product from, or to reduce imports of any product into, its territory, it shall notify the contracting parties in writing of the extent and nature of the subsidization, of the estimated effect of the subsidization on the quantity of the affected product or products imported into or exported from its territory and of the circumstances making the subsidization necessary. In any case in which it is determined that serious prejudice to the interests of any other contracting party is caused or threatened by any such subsidization, the contracting party granting the subsidy shall, upon request, discuss with the other contracting party or parties concerned, or with the contracting parties, the possibility of limiting the subsidization.

When it comes to energy, subsidies play a key role. Indeed, given their strategic role, governments support their energy sectors with a wide variety of measures, of which subsidies are among the most common. Regardless of whether it is based on fossil fuels or renewables, the energy sector is one of the most subsidised sectors in the world⁷⁴. As a matter of fact, governments essentially define the energy rates and incentives. The argument becomes even more relevant, however, if we focus on renewable energies. Some important, if not indispensable, measures for the development of renewables are categorised as subsidies. An example of this are the so-called Feed-in Tariffs (FITs), widely used to expand the share of renewables within the national energy mix. The Agreement sets three specific conditions for a measure to qualify as a subsidy: (1) it is a financial contribution and (2) it comes from a government or any public body of the member state and (3) it provides an advantage to the beneficiary⁷⁵. Furthermore, Article 2 ASCM requires that subsidies must fulfil the condition of specificity in order to be relevant to the agreement. Specific subsidies occur when they are directed only to certain enterprises or groups of enterprises, to a certain production sector or groups of production sectors, or to enterprises located in a specific geographical area⁷⁶.

The SCM Agreement divides subsidies into three main categories: prohibited, actionable, and non-actionable. Intuitively, prohibited subsidies are never permitted, as posited by Article 3 ASCM⁷⁷. Contracting parties may not maintain export subsidies and local content requirements and may not indirectly harm other members through the use of subsidies. Actionable subsidies are normally permitted unless the complaining party proves that they have negative effects on it.

These dispositions provide a strong foothold to challenge measures to support renewable energy, leaving them particularly vulnerable. Firstly, the inclusion of local content requirements is a particularly popular and effective means of incentivising domestic renewable energy production. It subjects the receipt of subsidies to the fact that locally produced components and/or inputs are used. It goes without saying the highly discriminatory nature of this measure, but also the undoubted advantages it brings to the development of local production. Moreover, almost any measure that incentivises the domestic market is liable to create harm to third parties. For example, by incentivising the domestic market for renewable energy in a given country, one would damage the possible export of energy from other countries to that country.

Finally, non-actionable subsidies are those support measures that cannot be challenged in any way. They were a kind of exception, making measures to support research activities, the development of disadvantaged areas, or adaptation to new environmental standards admissible. Article 8:1 ASCM paragraph (c) expressly referred to assistance measures “to promote adaptation of existing facilities to new environmental

⁷⁴ Asmelash, H.B. (2015). Energy Subsidies and WTO Dispute Settlement: Why Only Renewable Energy Subsidies Are Challenged, *Journal of International Economic Law*, Volume 18 261–285.

⁷⁵ Agreement on Subsidies and Countervailing Measures, *Article 1*. Definition of a Subsidy.

⁷⁶ Agreement on Subsidies and Countervailing Measures, *Article 2*. Specificity.

⁷⁷ Agreement on Subsidies and Countervailing Measures, *Article 3*. Prohibition.

requirements imposed by law and/or regulations which result in greater constraints and financial burden on firms”⁷⁸. This provision could have played a key role in encouraging measures to promote renewable energy, but the provisions concerning non-actionable subsidies expired in 1999 after the members failed to agree on their extension. At present, therefore, there are no exceptions to the discipline of the SCM Agreement⁷⁹. However, the possible application of the exceptions contained in Article XX GATT to the SCM Agreement is still debated in doctrine.

2.3.3 *The TRIMs Agreement*

The Agreement on Trade-Related Investment Measures is also relevant to the promotion of sustainable energy. The agreement applies to investment measures to trade in goods only⁸⁰ and provides for the application of National Treatment clauses and the prohibition of quantitative restrictions to them. Indeed, Article 2:1 TRIMs clearly states that “without prejudice to other rights and obligations under GATT 1994, no Member shall apply any TRIM that is inconsistent with the provisions of Article III or Article XI of GATT 1994”. Trade-related investment measures inconsistent with these articles include: local content requirements; export performance requirements; trade balancing requirements; foreign exchange balancing restrictions; and restrictions on an enterprise’s export of products or sale of products for export.

The TRIMs Agreement applies to the energy industry when it comes to cross-border energy investments or energy production⁸¹. Thus, even if they did not qualify as subsidies, any investments aimed at promoting the development of renewables through local content requirements or other discriminatory measures would find an additional obstacle in TRIMs and would therefore be inadmissible. However, at least in theory, this agreement would give the parties more policy space than the SCM Agreement. As a matter of fact, Article 3 TRIMs makes a direct reference to all exceptions contained in the GATT⁸², clarifying any doubts as to their possible validity with respect to TRIMs.

Additionally, the reference to Article III GATT is to be considered as a whole, thus including the exception in favour of government procurement.⁸³ Government procurement could play a key role in the efficient promotion of renewable energy. Indeed, this exception would allow investment in sustainable energy production, circumventing non-discrimination obligations, as long as it is used as a livelihood for the state apparatus and not for trade. We would then have so-called green government procurement (GGP), which,

⁷⁸ Agreement on Subsidies and Countervailing Measures, *Article 8*. Identification on Non-Actionable Subsidies.

⁷⁹ D. Farah P., Cima E. (2013). Energy Trade and the WTO: Implications for Renewable Energy and the OPEC Cartel, *Journal of International Economic Law*, Volume 16, Issue 3, 707–740.

⁸⁰ Agreement on Trade-Related Investment Measures, *Article 1*. Coverage.

⁸¹ Marhold, A. (2021). *Energy in International Trade Law: Concepts, Regulation and Changing Markets* (Cambridge International Trade and Economic Law). Cambridge: Cambridge University Press.

⁸² Agreement on Trade-Related Investment Measures, *Article 3*. Exceptions. “All exceptions under GATT 1994 shall apply, as appropriate, to the provisions of this Agreement”.

⁸³ Scalia F. (2022). La compatibilità dei regimi incentivanti l’energia sostenibile con il sistema WTO. *Revista da Faculdade de Direito UFPR*, Curitiba, v. 66, n. 3, 97-151.

given the enormous weight that government procurement has in the economy, could strongly incentivise environmentally friendly products and encourage the development of ever greener technologies⁸⁴.

2.3.4 *The TBT Agreement*

The Agreement on Technical Barriers to Trade (TBT) aims to ensure that technical regulations and standards applied to certain products do not create barriers to free trade and are not used as a tool to implement protectionist policies. The energy sector is absolutely a highly standardised market in which technical regulations play a key role, being applied to everything from wind energy and biofuels to pipeline transportation systems⁸⁵. Standards and regulations can both improve efficiency in energy production and reduce energy waste. Their implementation plays a key role in encouraging energy sustainability given the need to comply with increasingly green and clean international standards.

To this end, the preamble of the Agreement is relevant in that it recognises each country's right to "take measures necessary to ensure the quality of its exports, or for the protection of human, animal or plant life or health, of the environment, or for the preventions of deceptive practices"⁸⁶, provided that these measures are not applied in such a way as to constitute a means of arbitrary discrimination between countries with identical conditions or to introduce a restriction on international trade. Hence, Article 2 of the TBT allows technical regulations to restrict trade as long as they are applied on the basis of the Most Favoured Nation principle and are not more distortive than necessary, based on a principle of proportionality. The same article, among the objectives legitimising more restrictive regulations, mentions: "inter alia: protection of human health or safety, animal or plant life or health, or the environment"⁸⁷. Thus, the TBT Agreement would seem to provide a solid basis for the justification of measures incentivising renewable energies within the WTO framework, they would be allowed as long as the discrimination created is proportional to the goals to be achieved. The policy space that would be created thus seems considerable, yet so far, no energy-related standards and regulations dispute has been initiated and WTO jurisprudence has not been intervened in this matter.

2.3.5 *The GATS rules*

Despite the fact that its provisions have not been as successful as those described so far with regard to the debate on the regulation of measures in support of renewables, the General Agreement on Trade in Services still covers all energy-related services.

⁸⁴ Cottier, T., Malumfashi, G., Matteotti-Berkutova, S., Nartova, O., De Sépibus, J., & Bigdeli, S. (2011). Energy in WTO law and policy. In T. Cottier & P. Delimatsis (Eds.), *The Prospects of International Trade Regulation: From Fragmentation to Coherence* (pp. 211-244). Cambridge: Cambridge University Press.

⁸⁵ International Organization on Standardization (2018). *ISO and Energy*.

⁸⁶ Agreement on Technical Barriers to Trade, *Preamble*.

⁸⁷ Agreement on Technical Barriers to Trade, *Article 2*. Preparation, Adoption and Application of Technical Regulations by Central Government Bodies.

The GATS regulates international trade in services and its provisions relate only to them. Again, the principle of non-discrimination is at the core of the Agreement. Article II of the GATS regulates the Most Favoured Nation treatment. Under this disposal, if a country allows foreign suppliers in a sector, service providers from all other WTO Members should be provided with equal opportunity in that area. Moreover, MFN applies to all types of services, however, the Agreement allowed Members to list exceptions to preserve some activities that were in violation of Article II GATS at the time the agreement went into effect⁸⁸.

Article XVII GATS regulates the National Treatment, for which “each Member shall accord to services and service suppliers of any other Member, treatment no less favourable than that it accords to its own like services and service suppliers”⁸⁹. In this matter, Article XVI GATS regulates market access by guaranteeing it to all other members. However, what these two articles have in common is that unlike in the GATT, granting market access and National Treatment is not a given. Members are only obliged if they have committed to do so in their respective schedules. Indeed, the parties of the Agreement make sector specific commitments in their GATS schedules of specific commitments⁹⁰. This conditionality to which these clauses are subject, is to be understood as the synthesis found between the need for governments to regulate in order to achieve legitimate non-protectionist objectives and the desire to ensure a more open market for service trade.

As far as the application of GATS to the energy sector is concerned, it applies to all four supply modes⁹¹, so the possible applications to energy trade-related services are potentially endless. They range from power generation to the extraction of fossil fuels, from the construction of storage infrastructure to transportation pipelines, and even maintenance or technical support services.

⁸⁸ *World Trade Organization website*. Services: rules for growth and investment.

⁸⁹ General Agreement on Trade in Services, *Article XVII*. National Treatment.

⁹⁰ Mavroidis, P. C.; Bermann, G. A.; Wu, M. (2011). *The Law of the World Trade Organization (WTO): Documents, Cases, and Analysis*.

⁹¹ General Agreement on Trade in Services, *Article I:2*. Scope and Definition. For the purposes of this Agreement, trade in services is defined as the supply of a service: (a) from the territory of one Member into the territory of any other Member; (b) in the territory of one Member to one Member to the service consumer of any other Member; (c) by a service supplier of one Member, through commercial presence in the territory of any other Member; (d) by a service supplier of one Member, through presence of natural persons of a Member in the territory on any other Member.

Chapter III

Renewable Energy Disputes and the WTO Cases

3.1 *Renewable energy disputes*

The *Canada - Renewable Energy/FIT* and *India – Solar Cells* disputes are front-runners and involve the relationship between the WTO and renewable energy, which have kept the DSU mechanism under criticisms over the past decade. First of all, it is important to make it clear that such disputes should not be seen as an attempt by states to strike a balance between the need to advance measures to support the energy transition and the need to do so without measures that are excessively detrimental to free trade. Rather, the trade disputes over renewable energy support measures are *do ut des* disputes between a few advanced economies with fast-growing and competing clean energy industries⁹². Thus, they are motivated by competition for technological leadership and control of the global renewables market, which is set to rise in value, then by green energy sources as such. Indeed, the countries that are competing for this leadership are the ones that either subsidise renewables the most and consume the most energy at the same time⁹³. Consider that the most active countries in these disputes have been the United States, China, the European Union, India and Japan: they alone are responsible for more than 60% of global greenhouse gas emissions⁹⁴. Their impact, therefore, remains relevant for the entire international community.

3.1.1 *Canada - Renewable Energy/FIT*

In the *Canada - Renewable Energy/FIT* dispute there are measures taken by the Canadian province of Ontario to promote renewable energy consumption since 2009. Canada, through the Ontario Power Authority, was financing producers of solar photovoltaic and wind power energy through guaranteed rates for electricity, at rates set above those accorded to conventional producers of power⁹⁵. In practice, energy producers were compensated for the higher costs of producing clean energy through the granting of a fixed price for each unit produced. These types of measures, in their different declinations, are generally known as feed-in tariffs and are intended to incentivise the production or consumption of a given good or service, in this case, renewable energy. FITs have become a particularly popular policy tool in recent years to promote renewable energy, making it more economically attractive and competitive with fossil fuels⁹⁶. Moreover, as in the Canadian case, many of these measures subject financing by imposing local content requirements. In particular, energy

⁹² Asmelash, H. (2022). The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures: Has the Dust Settled Yet? *World Trade Review*, 21(4), 455-478.

⁹³ *Ibid.*

⁹⁴ Ritchie, H. (2019). Who Has Contributed Most to Global CO2 Emissions? *Our World in Data*.

⁹⁵ Cosby, A., Mavroidis, P. C. (2014). *A Turquoise Mess: Green Subsidies, Blue Industrial Policy and Renewable Energy: The Case for Redrafting the Subsidies Agreement of the WTO*. Robert Schuman Centre for Advanced Studies Research Paper No. 2014/17, Columbia Law and Economics Working Paper No. 473.

⁹⁶ Kulovesi, K. (2014). International Trade Disputes on Renewable Energy. *Rev Euro Comp & Int Env Law*, 23, 342-353.

suppliers had to guarantee minimum domestic content level requirements in the construction of clean energy generation facilities⁹⁷.

Japan and the European Union challenged these measures, bringing the issue of renewable energy into the WTO forum for the first time. By the complainant states, the Canadian FITs were considered to be non-compliant with the WTO standard, as they would be a violation of the National Treatment obligation under Article III GATT, Article 2 TRIMs Agreement, which excludes the admissibility of TRIMs inconsistent with Article III GATT, and Articles 1 and 3 SCM Agreement, which prohibits import substitution subsidies⁹⁸. In other words, the Canadian incentive scheme was seen as highly discriminatory, as it not only represented a prohibited subsidy, according to the classification made by the SCM Agreement but, through the inclusion of local content requirements ensured better treatment for locally produced goods, thereby discriminating against foreign products.

The Panel acknowledged that the measures put in place by the Canadian government amounted to TRIMs and that it was necessary to comply with the local content requirement in order to benefit from them, thus finding them incompatible with Article III GATT and Article 2 TRIMs⁹⁹. Canada then immediately proceeded to justify the admissibility of such measures as government procurement by invoking Article III:8 GATT. Indeed, if a measure qualifies as government procurement, WTO Members could deviate from granting National Treatment to imported goods and thus the local content requirement would be allowed. The interpretation, first by the Panel and then by the Appellate Body, of the Canadian justification claim, is particularly important given the decisive role that government procurement can play in the promotion of renewables.

Initially, the Appellate Body definitively clarified that the reference made by TRIMs to Article III GATT is to be considered in full, thus admitting the possibility of applying the government procurement exception also to measures qualifying as TRIMs¹⁰⁰. This was a first and necessary step since Canada's measures had been challenged with respect to both GATT and the TRIMs Agreement. The Appellate Body's attention shifted to the requirements that measures must meet to be classified as government procurement. Specifically, it clarified that members invoking this exception must be able to demonstrate two basic requirements: (1) that the product purchased is directed to the government or is used for government purposes, and (2) that the government does not intend to purchase a particular good for resale¹⁰¹.

⁹⁷ WTO DS 19 December 2012, Canada – Certain Measures Affecting the Renewable Energy Generation Sector, and Canada – Measures Relation the Feed-in Tariff Program.

⁹⁸ Ibid.

⁹⁹ Ibid.

¹⁰⁰ WTO Appellate Body Report, Canada – Certain Measures Affecting the Renewable Energy Generation Sector, and Canada – Measures Relation the Feed-in Tariff Program, adopted 6 May 2013, *paragraph 5.10*. “Any government procurement transactions covered by the terms of Article III:8(a) of the GATT 1994 will be removed from the scope of the obligations set out in Article III:4 and where a particular TRIM involves the same kind of government procurement transactions described in Article III:8(a), it cannot be found to be inconsistent with the obligation in Article 2:1 of the TRIMs Agreement”.

¹⁰¹ Ibid., paragraphs 5.68 – 69.

The Panel had pointed out that, when reviewing these conditions, Article III:8 GATT could only be invoked to justify a provision deemed discriminatory if the challenged measure concerned two directly competitive goods. Moreover, it went on to declare the applicability of the government procurement exception in the present case. In fact, although the Canadian government was purchasing electricity, and the foreign product treated differently from the domestic one was power generation equipment, the Panel had recognised the applicability of Article III:8 GATT because there was a close relationship as the equipment was used for electricity generation¹⁰². However, the Appellate Body, while recognising the validity of the Panel's reasoning that the goods in question must be directly competitive, reversed its conclusion. Indeed, it, resorting to a stricter and more literal interpretation of the notion of 'like product', concluded in disagreement with the Panel, stating that electricity and generation equipment are not in a competitive relationship with each other¹⁰³. As a result, the violation of Article 2.1 TRIMs, and consequently of Article III GATT, could not be contested.

With regard to the issue of identifying Canadian FITs as prohibited subsidies under the SCM Agreement, the starting point is to verify the existence of the three conditions that qualify a measure as a subsidy, namely the existence of a financial contribution, a conferred benefit, and a specific recipient. Both the Panel and the Appellate Body recognised the existence of a financial contribution, the purchase of goods being one of the forms of financial contribution mentioned in the Article 1 SCM Agreement¹⁰⁴. However, the real controversial point was when they came to verify the existence of a proven benefit. First, the Panel concluded that such measures could not be equated with a subsidy because, on the basis of the observable evidence, it was not possible to determine whether a benefit had been bestowed or not, and consequently it could not decide on the matter. According to the Appellate Body, the Panel stumbled however, in defining the market in which the benefit analysis was to be conducted. In fact, the Panel had considered the market for energy generated by each energy source as relevant for the analysis, whereas according to the Appellate Body, with manoeuvres that have been described as 'legal acrobatics'¹⁰⁵, this analysis had to be conducted on the basis of the existence of distinct markets for conventional and renewable energy¹⁰⁶. If, in fact, on the demand side there is a high level of substitutability between electricity generated from renewable and non-renewable sources, this is not so true on the supply side, as "in the present disputes, supply-side factors suggest that wind power and solar PV producers of electricity cannot compete with other electricity producers because of differences in cost

¹⁰² WTO DS 19 December 2012, Canada – Certain Measures Affecting the Renewable Energy Generation Sector, and Canada – Measures Relation the Feed-in Tariff Program.

¹⁰³ WTO Appellate Body Report, Canada – Certain Measures Affecting the Renewable Energy Generation Sector, and Canada – Measures Relation the Feed-in Tariff Program, adopted 6 May 2013, paragraph 5.79.

¹⁰⁴ *Ibid.*, paragraph 5.128.

¹⁰⁵ Cosbey, A., Mavroidis, P. C. (2014). A Turquoise Mess: Green Subsidies, Blue Industrial Policy and Renewable Energy: The Case for Redrafting the Subsidies Agreement of the WTO. Robert Schuman Centre for Advanced Studies Research Paper No. 2014/17, Columbia Law and Economics Working Paper No. 473.

¹⁰⁶ WTO Appellate Body Report, Canada – Certain Measures Affecting the Renewable Energy Generation Sector, and Canada – Measures Relation the Feed-in Tariff Program, adopted 6 May 2013.

structures and operating costs and characteristics”¹⁰⁷. Hence, “not only should the Panel have defined the relevant market at the outset of its benefit analysis”, but it should also have considered that the government definition of the energy supply-mix “shapes the markets in which generators of electricity through different technologies compete”, and “that the relevant market for the purpose of the benchmark analysis should be the market for electricity produced from wind power or solar PV technology”¹⁰⁸. From this follows that the comparison needed to establish the actual existence of a benefit was no longer between the FIT-guaranteed electricity prices and those in the competitive electricity markets, but rather between the FIT prices and the prices in the competitive renewable energy markets.

The appellants argued that this renewable energy market to which the Appellate Body referred could not even have existed without government intervention and that this was a clear benefit of the FIT programme. The Appellate Body, while agreeing that that market had been created by the government, made it clear that the presence of government intervention does not per se preclude treating the prices in that market as market prices for the benefit comparison¹⁰⁹. As a result, the Appellate Body established a distinction between government interventions in markets that already exist and those that create new markets. Finally, it attempted to conduct the benefit analysis by examining other renewable energy markets created by the government but was unable to complete it due to a lack of factual evidence.

In conclusion, the Panel and the Appellate Body, albeit with different approaches, concluded that the Canadian FIT programme was in all respects a trade-related investment measure containing at its core a local content requirement, and thus was in violation of Article III GATT and 2.1 TRIMs. Moreover, the Appellate Body was unable to determine that the Canadian programme was a prohibited subsidy. Therefore, Canada withdrew its support measure.

3.1.2 India – Solar Cells

India - Solar Cells dispute concerns another renewable energy support measure, namely India’s Jawaharlal Nehru national support programme for solar cells and modules. The Indian government pledged to purchase energy with incentive tariffs from manufacturers that were required to use locally produced cells and modules. The measure thus incorporated a local content requirement. The FIT programme was quite similar to the one challenged only shortly before in the *Canada - Renewable Energy/FIT* dispute. In fact, it too was challenged, this time by the United States, on the basis of Article III GATT, 3 TRIMs and the SCM Agreement.

Again, India attempted to justify the measure as government procurement on the basis of Article III:8 GATT. However, seeking to exploit the Appellate Body’s tentative openness in the Canadian case regarding

¹⁰⁷ Ibid., paragraph 5.174.

¹⁰⁸ Ibid., paragraph 5.178.

¹⁰⁹ Ibid., paragraph 5.185.

production processes and methods that do not affect the physical characteristics of the final product, India argued that the solar cells and modules were integral parts of the electricity itself unlike the generation equipment in the Canadian case and that there was, therefore, a direct competitiveness that makes Article III:8 GATT applicable. The Panel largely rejected the Indian argument, branding it as identical to the Canadian case: “Generation equipment in Canada’s case are in the same position as inputs in this case; and both are capital goods used for generation of electricity. Characterising solar cells as integral to electricity does not add anything further”¹¹⁰. Appellate Body upheld this decision of the Panel, so that the local content requirement since it could not be covered by Article III:8, constituted a clear violation of Article III GATT. The Appellate Body, however, clarified that it had deliberately decided not to decide whether the coverage of Article III:8 could also extend to discrimination relating to the factors of production and the production processes used for the products purchased through procurement, as this question arises only after the discriminated product has been found to be similar, directly competitive, or substitutable and is therefore in direct competition with the product purchased¹¹¹.

Having failed to justify these measures through the derogation of National Treatment by government procurement, India invoked as justification the general exceptions contained in Article XX GATT. Particularly interesting is that the exceptions invoked in this case are not what we might call ‘environmental exceptions’, i.e., those contained in paragraphs (b) and (g), but those contained in paragraphs (j) and (d). Articles XX(j) and XX(d) GATT set forth respectively the general exception for products in general or local short supply¹¹² and the general exception for necessary compliance with laws and regulations¹¹³.

With reference to the first exception, India argued that the measures put in place were necessary for the acquisition and distribution of products in general or local short supply, implying solar cells and modules were in short supply due to the lack of sufficient domestic production of these goods. In addition, the need to include local content requirements was also justified, as in order to combat this short supply while meeting energy security and sustainable development goals, it was necessary for these components to be produced domestically¹¹⁴. The Panel objected, however, that the exception contained in subparagraph (j), in using the adjective local, is surely also intended to include a sub-national context, but makes no reference to local

¹¹⁰ WTO Panel Report, India – Certain Measures Relating to Solar Cells and Solar Modules, adopted 24 February 2016, paragraph 7.123.

¹¹¹ WTO Appellate Body Report, India – Certain Measures Relating to Solar Cells and Solar Module, adopted 14 October 2016, paragraph 5.24.

¹¹² General Agreement on Tariffs and Trade, *Article XX(j)*. Measures essential to the acquisition or distribution of products in general or local short supply; Provided that any such measures shall be consistent with the principle that all contracting parties are entitled to an equitable share of the international supply of such products, and that any such measures, which are inconsistent with the other provisions of the Agreement shall be discontinued as soon as the conditions giving rise to them have ceased to exist.

¹¹³ General Agreement on Tariffs and Trade, *Article XX(d)*. Measures necessary to secure compliance with laws or regulations which are not inconsistent with the provisions of this Agreement, including those relating to customs enforcement, the enforcement of monopolies operated under paragraph 4 of Article II and Article XVII, the protection of patents, trademarks and copyrights, and the prevention of deceptive practices.

¹¹⁴ WTO Appellate Body Report, India – Certain Measures Relating to Solar Cells and Solar Module, adopted 14 October 2016.

production. In other words, the rule refers to the context where demand for the product is not met by supply, and not also to the origin of the product in short supply¹¹⁵. Thus, the risk of export dependency does not justify the exception¹¹⁶. Following the Indian claim that the Panel had interpreted the provision too narrowly, the Appellate Body analysed this exception for the first time in its history. It first clarified that in order to determine its application, it is necessary to conduct a two-step analysis: first, it is necessary to verify whether the measure is justifiable under a specific paragraph of Article XX GATT, and then to verify its consistency with the chapeau of the Article, namely that it does not constitute arbitrary and unjustified discrimination. Therefore, the Appellate Body agreed that India had only identified potential import disruptions and had failed to show that the producers had experienced any disruptions. It also confirmed the Panel's conclusion that India's lack of domestic manufacturing capacity was insufficient to constitute a product shortage. Finally, the Appellate Body rejected India's argument that the local content requirements are necessary for the purchase of solar cells and modules in order to achieve the goals of energy security and sustainable growth. Although these policy objectives can help guide the assessment of a measure's important characteristics, they do not show that there is a supply shortage¹¹⁷.

Finally, the last point to be analysed concerns the possible justification of the Indian FIT programme on the basis of Article XX(d) GATT. In advancing this possible justification, India relied on the fact that the local content requirement was necessary to ensure compliance with laws and regulations. Specifically, the interpretation is purely environmental, as India derived the obligation to develop renewable energy production from international instruments such as, among others, the Preamble of the WTO Agreement or the United Nations Framework Convention on Climate Change (UNFCCC). The Panel rejected this argument on the grounds that such conventions have no direct effect in India. Of the same view was the Appellate Body, which clarified that 'laws and regulations' should only mean those provisions that are officially incorporated into the legal system of a state¹¹⁸. However, recognising the different ways in which international obligations can penetrate the legal system of individual states, the Appellate Body focused more on the formal appearance that such norms must have rather than on their derivation or content. This implies that obviously, in the eyes of the Appellate Body, the general statements on the need to combat climate change contained in international agreements are not sufficient to justify such measures, but other obligations with different formal characteristics derived from international sources might be.

¹¹⁵ WTO Panel Report, India – Certain Measures Relating to Solar Cells and Solar Modules, adopted 24 February 2016, paragraph 7.225.

¹¹⁶ Scalia F. (2022). La compatibilità dei regimi incentivanti l'energia sostenibile con il sistema WTO. *Revista da Faculdade de Direito UFPR, Curitiba*, v. 66, n. 3, 97-151.

¹¹⁷ Karttunen, M., & Moore, M. (2018). India–Solar Cells: Trade Rules, Climate Policy, and Sustainable Development Goals. *World Trade Review*, 17(2), 215-237.

¹¹⁸ WTO Appellate Body Report, India – Certain Measures Relating to Solar Cells and Solar Module, adopted 14 October 2016, paragraph 5.106.

3.2 Interview with Dr Francesco Scalia

In order to deepen the analysis of the cases described above and to critically examine the implications they have had and will have in the future for the governance of renewable energy and climate change within the WTO system, in this section I report an interview with Francesco Scalia, a lawyer and lecturer who has carefully analysed the disputes in question.

Question 1: On what legal basis were the measures to support the development of renewable energy sources at the heart of the Canada-Renewable Energy/FIT and India-Solar Cells disputes challenged?

“In Canada-Renewable Energy/FIT, the plaintiffs argued that the feed-in tariff programme for wind and photovoltaic energy in the Canadian province of Ontario constituted a prohibited subsidy under Article 1 of the ASCM, both in terms of direct transfer of funds to the beneficiary companies and in terms of the purchase of the energy they produce. They also argued that the programme, by requiring the purchase of a certain percentage of domestic products, contained a domestic content requirement, prohibited by both Article 3 of the ASCM and Article 2.1 of TRIMs.

The Indian renewable energy support scheme was similar to the Canadian programme. The applicants, therefore, alleged the same violations of WTO rules”.

Question 2: What effects do the interpretations and decisions of the DSU, in particular the Panel and the Appellate body, have on the incentivisation of renewables within the WTO framework?

“The question of the compatibility with GATT and ASCM rules of subsidies to renewable energy production was raised by Japan and the European Union in the Canada - Renewables case and rejected by the Appellate Body, which held that the existence of the ‘benefit’ to the beneficiaries of the subsidies was not proven, as the complainants had mistakenly used the wholesale electricity market as the reference market and not the particular market of the disputed energy technologies. This is a fundamentally important pronouncement because it excludes at root the possibility of prohibited subsidies in the WTO system for those aimed at correcting market failures, insofar as they do not exceed that purpose. And incentives for renewable energy sources fulfil precisely this function.

Another indication we can draw from the DSU jurisprudence relates to the ‘environmental’ implications of the general exception in Article XX(d). The Appellate Body held in India - Solar Cells that the GATT rules do not apply when a measure has been taken by a Member State to implement international treaties that have been ratified or are otherwise directly effective in its law. The Report also specifies that, for an international treaty to be considered relevant for the application of the exception in question, it is not necessary that it provide for sanctions for its violation, it being sufficient that it lay down rules of conduct with a certain degree of specificity and normativity and means to attempt to ensure compliance. It seems to me that in this definition

we can include the Paris Agreement, which certainly lays down precise rules of conduct for the States Parties, presided over by norms - especially of a procedural nature - aimed at ensuring compliance, albeit without penalties and sanctions.

Lastly, the openings of Canada - Feed-in Tariffs and India Solar Cells on the subject of non-related process and production methods may represent the beginning of an important jurisprudential orientation for the purposes of the permeability of the WTO system to environmental demands. Considering goods that are not entirely similar and competitive, but produced with different methods and, in particular, using different energy sources, allows the differential treatment of goods produced with energy from renewable sources to be considered compatible with WTO rules”.

Question 3: The WTO was faced with the challenge of promoting renewable energy and, more generally, combating climate change. Would a broader and more permissive interpretation of the relevant WTO provisions have been possible in order to avoid possible incompatibilities? So, do you think that the current legislative framework is adequate to meet these challenges?

“The fundamental function of the World Trade Organisation is to establish a stable system conducive to open markets, and subsidies (still indispensable for almost all renewable sources), in their varied nature, tend to distort free international trade.

The agreements signed within the WTO do not contain any rules dedicated primarily to energy, although, due to the imposing of the climate change issue on the international scene, negotiations have been opened to consider the inclusion of the energy sector within the relevant regulatory framework. In particular, the sector was one of the priorities of the Doha Development Agenda, launched in November 2001, which mandated member states to negotiate the reduction or elimination of tariffs and non-tariff barriers to environmental goods and services, inter alia, promoting access to clean energy. However, only part of the Agenda was adopted as part of the Bali Package, resulting from the Ninth Ministerial Conference of the WTO on 3-7 December 2013 in Bali. While the negotiations for the adoption of the Environmental Goods Agreement (EGA) have so far been attended by only a few WTO members.

In recent years, there has been an increasing tendency to promote a greater permeability of rules oriented towards the protection of free trade values by non-trade values of an ethical, social, environmental and health nature. On the other hand, the preamble to the Marrakech Agreement emphasises that the goals of expanding production and trade in goods and services, growth in real income and effective demand, and full employment are to be pursued ‘allowing for the optimal use of the world’s resources in accordance with the objective of sustainable development’”.

3.3 Implications and critical analysis of the cases

Drawing from the empirical analysis carried out and the interview contributions, this section aims to critically analyse what happened in the cases under review in order to explore the implications for renewable energy within the WTO framework.

The first and, in my opinion, crucially important point that clearly emerges from the disputes in question is that the policy space left to non-specifically trade-related objectives, such as the incentivisation of renewables, depends largely on the interpretation that the DSU decides to give to the rules in question. Indeed, if there are no provisions that clearly refer to the terms in dispute, as is the case with energy in WTO agreements, it is up to the Panel, and the Appellate Body then, to recognise and draw the links that may bring a given measure within the sphere of implementation of a specific norm. This consideration logically brings two fundamentally important issues into our reasoning, one concerning the effective operation of the Dispute Settlement Mechanism and the other pertaining to the need to ensure legal certainty if renewable energies are to truly advance.

Regarding the first point, we have already touched upon the functioning of the DSU, however, here it is important to add that the balance on which the mechanism is based is far from stable and predictable. The WTO is an organisation in which the main actors are member states reflecting in it their specific and often conflicting preferences, and in which the Appellate Body plays a role of impartiality that is crucial for the proper functioning of the system. However, this does not imply that it is free from criticality and enjoys good health. Over the years, the DSM and especially the Appellate Body have been highly criticised by various WTO Members, particularly from the United States¹¹⁹, triggering a real ‘Appellate Body Crisis’. Indeed, since December 2019, DSM has been facing an unprecedented procedural impasse as the Appellate Body is unable to function. This situation is the consequence of the US delegation’s tactic of systematically blocking the appointment of new AB members since 2016¹²⁰. This implies that, without a functioning AB, the losing party can prevent the Dispute Settlement Body from adopting a Panel report by simply appealing. Therefore, the components that have allowed the WTO to successfully settle international trade disputes are not present at the moment¹²¹. Analysing the motivations that led to this extreme action on the part of the US and exploring the reasons for the crisis is beyond the scope of this work. What is instead crucial to emphasise is that, without concrete solutions, the governance of renewable energies within the WTO system is left almost entirely in the hands of a DSU that is going through an unparalleled crisis.

¹¹⁹ Pauwelyn, J. (2019). WTO Dispute Settlement Post 2019: What to Expect? 22 JIEL 297, 301.

¹²⁰ Kotzampasakis, M., & Energy and Climate Law, L. L. M. (2020). The WTO Appellate Body Crisis: a legal assessment in search of a solution. University of Groningen.

¹²¹ Ibid.

As far as legal certainty is concerned, it is a fundamental and universally recognised concept that underpins legal systems, whether they are national, international or supranational. When it comes to climate change, it requires a swift and decisive response that can only be ensured if there is clarity and certainty around the international legal framework in which some of the most popular measures needed to accelerate the energy transition fall¹²². However, from the scenario outlined so far, it is clear that the treatment of renewable energy incentive measures certainly lacks clarity and certainty, starting with the basic questions concerning energy. Consider that so far case law has never clarified the age-old question of whether energy should be treated as a good or as a service: in the two disputes analysed, the Panel and the Appellate Body expressly decided not to ask this question, justifying themselves on the basis of a tacit agreement between the parties to consider energy as a good, given that these measures were challenged on the basis of provisions that only concern goods. The issue, therefore, remains open, leaving the fate of similar measures totally uncertain should the Dispute Settlement be questioned on the issue.

Moreover, within the WTO system, the dispute settlement system is the key element providing security and predictability to the rule-oriented multilateral trading system¹²³. This assertion, however, may only become true if the Panel and Appellate Body interpret and apply the law predictably when making decisions regarding complaints brought forth by WTO members. The degree of legal clarity and predictability that can be achieved in the findings of the Panel and the Appellate Body will determine the security and predictability of the trading system, and through it, the market, and its various operators¹²⁴. However, the rules relevant to renewable energy measures were not designed with the regulation of this sector in mind, they only turned out to be relevant because they were invoked in disputes concerning them. This implies that when the mechanism is called upon to deliberate on such provisions, it does not have to draft and interpret on the basis of rules with a clear purpose and content. Rather, it enjoys greater freedom. Precisely this freedom of interpretation, as we will see by critically analysing the interpretation given in the disputes analysed, represents both an opportunity and a threat. If it leaves the Panel and the Appellate Body sufficient room to interpret the provisions in favour of incentivising renewables, not without requiring a considerable interpretative effort that is very often cumbersome and not always completely justifiable, at the same time it makes contrary interpretations much easier. In other words, in the way these rules are designed, it is much easier to arrive at interpretations that are contrary to the incentivisation of renewables, while favourable interpretations sometimes require real legal acrobatics.

¹²² Asmelash, H. (2022). The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures: Has the Dust Settled Yet? *World Trade Review*, 21(4), 455-478.

¹²³ Dispute Settlement Understanding, *Article 2.3*. The dispute settlement system of the WTO is a central element in providing security and predictability to the multilateral trading system. The Members recognize that it serves to preserve the rights and obligations of Members under the covered agreements, and to clarify the existing provisions of those agreements in accordance with customary rules of interpretation of public international law. Recommendations and rulings of the DSB cannot add to or diminish the rights and obligations provided in the covered agreements.

¹²⁴ Weiss, W. (2003). Security and predictability under WTO law. *World Trade Review*, 2(2), 183-219.

Particularly relevant to this is the resolution provided by the Appellate Body in the *Canada - Renewable Energy/FIT* dispute, with regard to the possible recognition of the FIT programme as a prohibited subsidy under the SCM Agreement. As Scalia notes in the interview¹²⁵, the Appellate Body's ruling on this point, at least for now, shields renewable energy incentive measures from being regarded as prohibited subsidies. The Appellate Body's ruling that the advantage created by such a measure must necessarily be sought in an entirely similar market, i.e. a renewable energy market created by state intervention, makes it significantly more difficult to identify it and, without this requirement, it is legally impossible for a measure to constitute a subsidy under WTO Agreements. Indeed, if the reference market for assessing the existence of the benefit to the beneficiaries of the Canadian FITs had been the entire electricity market, there would have been little doubt that they were prohibited by the SCM Agreement¹²⁶. Moreover, according to Scalia¹²⁷, this pronouncement is also fundamental because it excludes at root that one can speak of prohibited subsidies in the WTO system for those aimed at correcting market failures, insofar as they do not exceed that purpose. Opening the possibility that measures aimed to create an internal market for renewable energy could be considered as 'corrective' if pollution and climate change are seen as market failures.

This protection provided by the Appellate Body immediately seemed to work and proved to be partially effective in preventing, or at least making more difficult, the identification of such measures as prohibited subsidies. For example, the complainants in the *India - Solar Cells* case immediately withdrew their complaints on the basis of the SCM Agreement on the grounds that the case had been found to be entirely similar to the Canadian case, and consequently, the Indian measures would have enjoyed the protection afforded by the Appellate Body's previous interpretation.

However, the critical point, in this case, is that although the Appellate Body with its resolution achieved a desirable and promising result for renewable energy incentive measures, this outcome has been widely criticised, as in order to achieve it, it was necessary to engage in real legal acrobatics in order not to recognise the Canadian FITs as a subsidy. The most important of these acrobatics was undoubtedly to distinguish between the already existing generic energy market and the newly created renewable energy market with regard to the benefit analysis necessary to configure a measure as a subsidy. Nevertheless, this artificial distinction may be very useful in this case, but it is bound to raise numerous criticisms and the Appellate Body will necessarily have to narrow down its judgement in the future¹²⁸. Indeed, this legislative ploy seems neither definitive nor capable of generating greater certainty in the treatment of renewable energies and may

¹²⁵ See Section 3.2 of this work.

¹²⁶ Pal, R. (2014). Has the Appellate Body's Decision in *Canada – Renewable Energy/Canada – Feed-in Tariff Program* Opened the Door for Production Subsidies? *Journal of International Economic Law*, v. 17, n. 1, p. 125-126.

¹²⁷ See Section 3.2 of this work.

¹²⁸ Cosbey, A., Mavroidis, P. C. (2014). *A Turquoise Mess: Green Subsidies, Blue Industrial Policy and Renewable Energy: The Case for Redrafting the Subsidies Agreement of the WTO*. Robert Schuman Centre for Advanced Studies Research Paper No. 2014/17, Columbia Law and Economics Working Paper No. 473.

be difficult to replicate in future disputes. The first critical point that emerges is that it is very difficult to determine when, how and why a given market can be defined as new or existing. For example, it is unclear how many producers, or economic actors, are needed to be able to consider a market as already existing; whether the degree of market penetration, production costs, or the so-called supply-side factors referred to by the Appellate Body in *Canada - Renewable Energy/FIT* should be used to determine market status; or, according to which indicators over time a market first identified as new can be said existing¹²⁹.

Another crucial issue is that, even if this distinction between the new and the existing market survived the future case law, and the renewable energy market is considered relevant, it should not be forgotten that it is not this distinction in itself that protects these measures. This distinction simply makes it much more difficult to find comparable data to carry out the benefit analysis, and in its report, the Appellate Body has clarified the type of information needed to complete the analysis. Hence, it can be possible that subsequent complainants would use this ruling as advice and offer suggestions for benchmark markets that are close to the circumstances present in the implementing market. In the future, Panel and Appellate Body will find it much more difficult to attribute the inability to calculate a benefit to a lack of data. Once the comparative market has been established, if the compensation in the implementing market is higher than that in the comparator market, a FIT will be able to impart a benefit, and would probably be determined that relatively generous FIT programmes are subsidies¹³⁰.

In addition, establishing the existence of a distinction between newly created markets and already existing markets could set a dangerous precedent. If the Appellate Body found the existence of this division with respect to the energy and renewable energy market, there is nothing to prevent it from also being recognised with respect to other sectors of goods and services that perhaps have a negative impact on the environment or are particularly controversial. In short, this legal contrivance may work if it is applied to justify FIT schemas that have an outcome considered desirable in that they favour the energy transition, but it risks being extremely dangerous when it concerns measures with harmful effects on the environment or on the fair competition itself, legitimising harmful industrial policies and encouraging their abuse.

Thus, although the Appellate Body's efforts to exempt renewable energy incentive measures from the application of the SCM Agreement's very strict regulations is undeniable, the solution found presents important critical issues and does not seem to be able to provide sufficient legal certainty to favour the energy transition. Only the progress of case law will clarify these issues, however, for now it seems reasonable to state that the future of green measures that clash with WTO subsidy regulation will not have a certain and safe future despite the openings demonstrated.

¹²⁹ Ibid.

¹³⁰ Ibid.

Another key implication is that from the case law addressed so far, there appears to be no room within the WTO framework for local content requirements to support the development of domestic renewable energy production. Both contested measures in *Canada - Renewable Energy/FIT* and in *India - Solar Cells*, managed to escape being considered prohibited subsidies but were considered trade-related investment measures incompatible with Article III GATT and 2.1 TRIMs, as the local content requirement contained in them would have been a clear violation of National Treatment and thus of the principle of non-discrimination. In fact, in the two cases in question, the Appellate Body is characterised by a very strict interpretation of the government procurement exception invoked to defend these measures. It was made clear that the exception contained in Article III:8 GATT can only be relevant if the goods for which it is intended to justify discrimination are directly competitive products. In *Canada - Renewable Energy/FIT*, the Panel had attempted a timid opening by equating generation equipment with electricity itself, however, the Appellate Body quickly closed this opening, emphasising that the final product cannot be equated with a component for its production, even if it is essential. Indeed, this reluctance to interpret such provisions more loosely derives from the fact that the Dispute Settlement Mechanism has always been very careful and cautious in justifying discriminatory measures on the basis of the exceptions contained in the WTO Agreements, as they may derogate from those cardinal principles of the international free trade system and whose protection is an absolute priority for the WTO, such as non-discrimination. Even if such measures would be fundamental to the fight against climate change, we are still a long way from a ruling affirming the predominance of environmental concerns over the protection of free trade¹³¹.

By analysing this aspect of the dispute, as Scalia points out¹³², the only small opening that can be discerned in the two disputes at issue on the part of the Appellate Body is that concerning nonrelated process and production methods, i.e., processes and production methods that do not affect the physical characteristics of the final product. They would open up the possibility of different treatments of goods that are in all respects similar and competitive, but produced by different methods and, in particular, using different energy sources, being compatible with international trade rules, provided that WTO jurisprudence does not let up and succeeds in pushing forward this timid opening. Indeed, if the real problem with this incompatibility remains the discriminatory content, one might well think that it would be sufficient to exclude the local content requirement to make such measures permissible. However, they would lose an important part of their effectiveness. It is undeniable that local content requirement clauses are particularly opposed because their rationale, unlike that of FITs favouring the production and purchase of clean energy, is purely that of an industrial policy, aimed at diverting investments and trade flows to domestic companies at the expense of foreign ones. However, this does not exclude that they can have positive effects on the environmental policies

¹³¹ D. Farah P., Cima E. (2013). Energy Trade and the WTO: Implications for Renewable Energy and the OPEC Cartel, *Journal of International Economic Law*, Volume 16, Issue 3, 707–740.

¹³² See Section 3.2 of this work.

of individual states. For example, local content requirements can accelerate the energy transition, favouring a faster adaptation to clean energies of the respective national energy sectors, and speeding up development and research in this field, which more than ever needs new technologies and solutions to combat climate change. Furthermore, in the global scenario in which we currently find ourselves, local content requirements play a key role in promoting a state's energy independence from foreign exports for energy security reasons. Suffice it to say that after the Russian invasion of Ukraine, which showed the risks of excessive energy dependence, Western states have deeply linked the transition to renewable energy to the quest for ever greater independence. It is therefore difficult to imagine that states can now develop new energy sources by over-relying on other actors and giving up their independence again.

Finally, the exceptions inherent in Article XX GATT with which India attempted to justify its FIT programme remain to be considered. Both Indian petitions filed on the basis of paragraphs (d) and (j) were rejected by the Panel and the Appellate Body without raising any particular clamour. In fact, it is peculiar and unclear how India invoked these two exceptions, given that the exceptions most frequently used and best suited, at least in theory, to justify trade-related environmental measures were those contained in (b) and (g)¹³³. Indeed, the Appellate Body had an easy time recognising in a straightforward and precise manner that India's lack of domestic manufacturing capacity was not enough to constitute a situation of 'general or local short supply' that could fall under the exception in (j), and consequently without leaving any relevant implications for a future recourse to this exception with regard to environmental measures.

Much more interesting is, as again emerges from the interview with Dr Scalia¹³⁴, what concerns paragraph (g). The Appellate Body, while rejecting the Indian justification, clarified that such an exception could be effective in the case where the state in question puts a measure in place to implement international treaties that have been ratified or are directly operative in domestic law, provided they constitute more than a mere declaration of intent and with a certain degree of specificity. This could therefore open up the justification for measures with environmental and energy transition content that retain discriminatory content if they are anchored in compliance with treaties such as the Paris Agreement, or other international instruments that lay down sufficiently precise and effective rules of conduct.

In conclusion, it is evident how the WTO system is gradually opening up to the incorporation of non-trade-related policy objectives such as environmental protection. This is evidenced by the attempts to achieve greater regulation of the sector in the Doha Development Agenda and the Ninth Ministerial Conference of the WTO in Bali, as well as the negotiations to adopt the Environmental Goods Agreement and the analysed openings of the Dispute Settlement Mechanism¹³⁵. However, the climate crisis requires a swift and effective

¹³³ Asmelash, H. (2022). The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures: Has the Dust Settled Yet? *World Trade Review*, 21(4), 455-478.

¹³⁴ See Section 3.2 of this work.

¹³⁵ See Section 3.2 of this work.

response, and certainly cannot wait the long time it would take to negotiate a new agreement on the issue. The WTO needs to tackle this issue head-on, because in doing so it could regain the leading role on the international stage that is increasingly being challenged by the proliferation of regional and preferential trade agreements.

Chapter IV

The Role of WTO and Possible Reforms

This chapter advances possible reforms to the WTO's governance of renewable energy and critically explores the role the WTO can play in promoting renewables and, more broadly, in regulating climate change. In addition to the empirical analysis conducted in Chapter III, this section draws on interviews conducted with Professor Angelo Mario Taraborrelli and Dr Elena Cima.

4.1 *Interview with Professor Angelo Mario Taraborrelli*

This section reports the interview conducted with Professor Taraborrelli, a leading expert on energy markets and energy policy. His contribution is relevant as it expands the discussion with the states' views on incentivising renewable energy.

Question 1: It is clear, from the empirical analysis conducted, that the incentive of renewables is incompatible with the WTO system due to its discriminatory content (preferential tariffs, local content requirements etc.). What tools could individual states use to circumvent such a stringent non-discrimination constraint?

“First of all, a few necessary premises. If you look at the run of renewables since 2010, and see it graphically, it turns out to be a very modest run. Renewable energies, including hydropower, have been growing at a rate of around 6% per year. According to the projection for 2050, if countries live up to their international commitments under the United Nations, growth must continue to be 6% per year. However, it is not a difficult thing to grow by 6% yearly when you are, for example, at low levels of renewable energy production capacity, quite another to grow by 6% when you are already at more advanced levels. The commitment increases, also in terms of investment. To be able to sustain these levels of growth, technological development is crucial. A market capable of sustaining this race for renewable energy is fundamental, not least because after the events involving Russia and Ukraine, this race has become much more urgent, at least in Europe. Without such a market, such a race cannot exist. An important point that many overlook is that - as happened in Italy in 2017 with coal-fired power plants - each state can decide by decree to stop energy production from polluting sources. However, what cannot be decided by decree is by when there will be adequate power generation capacity from renewable sources to fill the need left by the elimination of fossil fuels. That is for the market alone to decide. The market must always be taken into account in these assessments, as prices, costs and profitability are non-negligible aspects. Suffice it to say that it took only three years of low oil and gas prices for the Soviet empire to collapse. So if the market alone cannot sustain this rush, it is up to individual countries to create incentives to support the transition. If the primary goal on a global level is to curb emissions, there can only be one rule: those with the capacity must be able to invest

and incentivise freely. If such disputes start within the WTO, the game is lost from the start. In Italy, for example, investors in renewables have reduced their interest over time following the revision of the robust incentive system. Added to this is the problem of lengthy authorisation procedures.

The inherent discrimination could be overcome by eliminating the explicit incentive system. In many countries, a tender is held and whoever offers the lowest price for electricity produced wins, at which point everything is based on the free market. Everything would proceed on a competitive basis. This is to say that the solution might be not to establish an incentive a priori, as is the case with the feed-in premium or the feed-in tariff. The state would directly guarantee a purchase price proposed by the most competitive producer, thus guaranteeing the expected profitability of the producer who would assume the entire risk.

It is a type of measure that is already used in many states; for example, Italy's Enel has participated in many of these tenders. If the goal is to rush towards renewable energies because there is a problem with rising temperatures and energy dependence on Russia, a question of priority arises and clear-cut measures are needed”.

Question 2: Would a more flexible and less stringent regulation in this sense, tolerating discrimination to promote renewable energies, and thus combat climate change, have clear advantages in terms of their development, or would it simply serve to conceal the new energy market domination aims of the world's leading economies?

“Let us take as an example the case of a large international company with interests in many countries such as Enel. Once it has won a tender within a country, the company makes sure it can realise the investment, only then does the construction itself come into play. It is at this second stage that the protectionist policy comes into play: by investing in a given country, it can subject the investment to local production requirements. However, here too it is a question of priorities. What is more important, saving the planet or competition? If, as is obvious, the answer is the former, I do not see a big problem in these forms of protectionism and discrimination, the rigidity of the rules should be overcome.

In addition, the construction of renewable energy-generating installations, if one excludes offshore wind power generation, is not an activity that suffers from high technological barriers to entry. For example, constructing a photovoltaic field is much easier than laying a gas pipeline at sea, so there is no great technological barrier to entry. Moreover, the construction itself of such works is very often done locally, so it is not convenient to move from one state to another. In my experience, this is not a real problem”.

Question 3: The climate crisis, the pandemic, and the Russian-Ukrainian conflict have shown the limitations and dangers of an increasingly interconnected world, further exacerbating the poor state of health in which international organisations find themselves interfacing with increasingly overbearing pushes towards

regionalism. In this context, what could international organisations do to meet the challenge of climate change?

“The role of international organisations does not depend on them, but on the member countries. If the set-up of these institutions is not reviewed from a purely multilateral perspective, all talk is in vain. Similarly, the only thing that can be done in the event that some states do not comply with the objectives of the fight against climate change is the so-called name and blame, but there are no instruments to ensure compliance with these rules. Within the United Nations, for example, each member country sends its own plan of action for the fight against climate change. Then, when it comes time to verify the results, if they are not in line with what is stated in the plan, there is nothing that can be done to bring the states back into compliance with the targets set. However, changing this system is a very difficult task. States are reluctant to bind themselves excessively. The US, for example, has not even signed up for the Kyoto Protocol. Nobody wants to surrender even part of their sovereignty, especially in a strategic sector like energy.

In this, I personally see no future. Action should be left to the individual states, which even within the WTO should be free to pursue their own goals in the fight against climate change. This incompatibility must be overcome, it is a question of priorities, and we are currently experiencing an emergency that requires a quick and decisive response”.

4.2 Interview with Dr Elena Cima

This section reports the interview with Dr Elena Cima, a WTO expert who closely experienced the environmental implications of international trade, and that has largely deepened the treatment of support measures for renewable energy in the governance of the WTO.

Question 1: In the major disputes involving the governance of renewables within the WTO system, the DSU has played an important role in creating policy space for non-trade-related objectives such as combating climate change; however, the reluctance to justify measures with broad environmental benefits if they are even partly discriminatory is equally evident. Why has the DSU left so little room for such objectives in the interpretation of its provisions?

“Certainly, when one looks at the evolution of the relationship between trade, climate change and renewable energy at the level of negotiations, with the exception of the latest Agreement on Fisheries Subsidies¹³⁶, which is the only agreement in the WTO that has a purely environmental objective, we are dealing with rules that are first and foremost aimed at free trade. Not much progress has been made in the negotiations. Appellate Body and Panel, on the other hand, are the ones who have taken this battle forward. However, although the Appellate Body has certainly made great strides, often adopting an evolutionary

¹³⁶ World Trade Organization. Agreement on Fisheries Subsidies, adopted on 17 June 2022.

interpretation - I am referring to *US - Shrimp*¹³⁷ and other such cases - and considering all that is happening in other fora dealing with the environment and climate change, they must nevertheless apply the norms that are there, and this applies to all international judicial bodies. If the norms are aimed to free trade, the leeway of judicial bodies remains restricted to the content of the norm and its purpose. Thus, however elastic and evolutionary one wants to be, Panels and Appellate Bodies work with a raw material that is somewhat limited. The SCM Agreement, on the other hand, is an agreement that does not take any of this into account at all. Article 8 is no longer there, and it would not have been particularly useful anyway. In an agreement like this, there is no reference to environmental issues, there is no exception. This leaves bodies to work with very little.

Regarding *Canada - Renewable/FIT* case, this dispute has been much criticised because the Appellate Body avoided making a clear-cut decision on the matter. I recall that there was great expectation around the outcome of this case, as an answer on the possible differentiation between renewables and non-renewables and related issues was finally expected. However, although they gave some indications, they stopped short of even establishing whether the measure was a subsidy or not. The discourse of having identified two different markets for the benefit analysis of the SCM Agreement is an extremely interesting element. However, it is not clear what the real intent was in delimiting these two markets, as this was not carried forward into subsequent case law and did not necessarily serve in that decision. It was much used by the doctrine to extend its application to power production methods and the concept of likeness. From my point of view, this division had more of an impact on the doctrine than on any future amendments to the agreement or future DSM decisions.

As far as the local content requirement is concerned, it is an extremely complex issue. The question is whether the rules actually limit real attempts to promote renewables or disguised attempts, because in the end even when the current rules, Article XX GATT for example, allow for justification of certain measures, one always has to deal with the chapeau. So, the question is: was the local content requirement necessary? In all green industrial policy measures, there are two components. The green rationale and the industrial rationale, and the industrial part can always be eliminated. This is the difference from previous environmental measures. A state may decide to adopt a renewable subsidy that does not have a local content requirement. Clearly, there is also an issue of infant industries, for some countries if there is no LCR the government cannot even introduce that standard. We must understand to what extent the LCR is really necessary for a measure to be implemented, adopted and effective. At the same time, the LCR is also prohibited by GATT, so I think it is hard to imagine an Appellate Body that could accept an LCR. The question to ask is what we should advise governments. We advise governments to design measures that do not have these kinds of features, but that can achieve their goal in other ways.

¹³⁷ United States – Import Prohibition of Certain Shrimp and Shrimp Products.

Furthermore, when it comes to subsidies for renewable energy, they are a big basket case. On the one hand, the fact that a subsidy agreement treats all kinds of subsidies, from oil subsidies to renewable energy subsidies, identically can create problems. On the other hand, not differentiating between different subsidies in the same area of renewable energy can also be debatable, because these support measures are not all the same. Subsidising electricity production from renewables is not the same as subsidising technologies, the commercial impact is very different. In addition, if they contain LCRs, these measures prolonged over time have the risk of incentivising industries that are not efficient and therefore should not necessarily be protected. The difficulty lies in trying to interpret and have rules that do not always allow the eligibility and protection of these kinds of subsidies but strike a balance between these various needs. However, this is extremely complex. One of the main problems, which often comes up here in Geneva, is that there is very little transparency about these measures, we don't know about them and very often they are not notified, it is not clear which ones are really to be protected and which ones are not, which ones are necessary and which ones are really efficient. Until we have a clearer idea at this level it is difficult to have a plan when it comes to regulatory reforms or judicial interpretations”.

Question 2: What reforms could ensure favourable treatment of renewable energy incentive measures within the WTO framework?

Question 3: To what extent an agreement within the WTO framework would enhance renewable energy and, more generally, goods produced with non-polluting techniques be a viable and efficient solution?¹³⁸

“Regarding climate change and renewable energy, the entry points for action at the WTO level are numerous. For example, one of them is to work on renewable energy subsidies, but also, for example, the elimination of fossil fuel subsidies. On a theoretical level, the idea of a new agreement or a serious amendment to the subsidies agreement is very difficult to imagine. That said, important lessons can be learned from the negotiations that have just taken place on fisheries subsidies. These are negotiations that have lasted 20 years and, clearly, such a duration cannot be accepted with regard to the crisis we are experiencing. It is, however, a negotiation that has changed completely over the last period in particular. One of the problems is not only that within the trade community there is a certain type of mindset - which is slowly changing - that is still tied to free trade and prioritises trade objectives, but that there is a certain negotiation technique. The negotiation of trade agreements is a tit-for-tat, they are continuous bargains. When it comes to agreements and treaties that deal with global public goods, such as climate change mitigation, one cannot use this technique. In fact, the negotiation of fisheries subsidies agreements in the last period has completely changed the mode and still managed to arrive at a concrete result. An important lesson is that the needs of the various countries were taken into account from the beginning and right up to the end, thus implying common but differentiated

¹³⁸ For the sake of clarity, the answers to questions 2 and 3 have been merged.

responsibilities, the needs of small island countries, rather than developing or least developing. If theoretically, one wanted to come to an agreement on other issues more related to renewables and climate change, these would be necessary ingredients: a change of mentality in the way of negotiating, a constant consideration of the needs of the least developed countries, which represent the majority of the membership. On a feasibility level, it remains extremely difficult to imagine something like this happening. But if there is a right time to do so, that time is now. Everything that is happening at the WTO level, the way countries behave in Structured Discussions on Trade and Sustainability, is bringing about a change of narrative.

Another element that should be considered is to understand to what extent a reform is really necessary. If one looks at the measures in the WTO's Environmental Database, hundreds of countries have various types of subsidies in place that do not create any problems at the WTO level. So, I think that talking about such reforms within the WTO is crucial on a symbolic level, to show that it is not only a trade organisation but also, as it says in the preamble, it aims for sustainable development, but I am not sure it is on a practical level as well. It is important that reforms take place to show the world a new footprint. However, it is difficult to say that countries really are in a regulatory chill and therefore are not taking measures to incentivise renewable energy and climate change for fear of WTO regulation. What is needed is a precise analysis of the policies of these countries and how limited they really are. If the answer is yes, they are constrained, then there is a need for regulatory reform, but frankly, it is hard to say”.

4.3 *An analysis of potential reforms*

From the analysis conducted so far, it emerges that the most critical points in the governance of renewable energy incentive measures within the WTO framework are the general legal uncertainty surrounding the fate of such measures, and the lack of norms guaranteeing a secure policy space for non-trade related objectives such as environmental protection. In particular, the provisions that most create and reflect these problems in the entire WTO system are to be found in the SCM Agreement, even though in the disputes analysed they were not the basis for the declared incompatibility. The first point to be analysed is therefore the possibility of reforming the SCM Agreement.

The discipline posed by the Agreement is not free of the uncertainty mentioned above, for example, it remains unclear which measures really constitute a financial contribution, which financial contributions confer a benefit, and, as pointed out in the disputes analysed, which markets are relevant for the purposes of the benefit analysis and the question of specificity. Overall, the SCM disciplines' legal uncertainty restricts the Members' policy options and places them at the mercy of unforeseen, and incomplete answers provided by future Panel and Appellate Body rulings¹³⁹. Moreover, unlike most agreements signed within the WTO,

¹³⁹ Rubini, L. (2015). *ASCM Disciplines and Recent WTO Case Law Developments: What Space for 'Green' Subsidies?* Robert Schuman Centre, European University Institute.

the SCM Agreement does not contain any clause or provision that would create exceptions that could in any way justify trade-restrictive measures taken to pursue objectives of common and public interest such as energy transition. Article 8, which provided for non-actionable subsidies, is no longer in force, and this has left many of these measures unprotected and destined to be recognised only as actionable or prohibited subsidies. This provision could have played a key role as if a measure had been recognised as a non-actionable subsidy it would have been immune from being challenged through the DSM by other states. Of particular interest is that Article 8:2 under (c) set up a real environmental exception, configuring as non-actionable measures of “assistance to promote adaptation of existing facilities to new environmental requirements imposed by law and/or regulations which result in greater constraints and financial burden on firms”¹⁴⁰.

Without former Article 8, the existing SCM rules appear overall too general and unable to clearly provide the necessary policy space for their members to make constructive use of subsidies and other forms of support in circumstances when they are required to pursue legitimate objectives. So, the current SCM Agreement rules seem overall too general and unable to clearly provide the necessary policy space for their members to make effective use of subsidies and other forms of support in situations where they are required to pursue other objectives, and this is especially true in the absence of former Article 8¹⁴¹. From this follows the need to reform the SCM Agreement in such a way that it can take into account policy considerations and rationales for subsidisation, ensuring that measures aimed at correcting market failures, such as the environmental crisis, are treated differently from all other measures, even if they are partly trade-distorting.

A first reform option to be considered, and perhaps the most plausible in terms of feasibility, is to extend the application of the exceptions contained in Article XX GATT to the SCM Agreement as well. The doctrine has long debated this possible extension, finding support from numerous scholars. In particular, it has been argued that the GATT has, with respect to the so-called operational agreements, a general character, and therefore should apply to every matter not expressly regulated¹⁴². Moreover, the Marrakech Agreement, established the single undertaking rule by providing in Article II:2 that “the agreements and associated legal instruments included in Annexes 1, 2 and 3 (hereinafter referred to as “Multilateral Trade Agreement”) are integral parts of this Agreement, binding on all Members”¹⁴³. Thus, it may be argued that the exceptions in Article XX are effective in all of the multilateral treaties because they are a part of one general agreement that is expressed in numerous of them. Furthermore, implementing such a solution would not represent a particularly difficult challenge, to take for granted the necessary willingness to do so on the part of the actors

¹⁴⁰ SCM Agreement. *Article 8*, Identification of Non-Actionable Subsidies.

¹⁴¹ Cima, E. (2017). Caught between WTO Rules and Climate Change: The Economic Rationale of ‘Green’ Subsidies, in Mathis K., & Huber, B.R. (eds.), *Environmental Law and Economics*, Springer.

¹⁴² Scalia F. (2022). La compatibilità dei regimi incentivanti l’energia sostenibile con il sistema WTO. *Revista da Faculdade de Direito UFPR, Curitiba*, v. 66, n. 3, 97-151.

¹⁴³ WTO Agreement: Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 1867 U.N.T.S. 154, 33 I.L.M. 1144 (1994).

involved. Indeed, it could be implemented through an understanding on the interpretation regarding the extent of applicability of Article XX GATT, or, perhaps even more simply, through future pronouncements of the Appellate Body generating case law favourable to this type of interpretation.

However, it can be argued that this possibility of reform, although relatively easy to realise, has important criticalities and would not provide the legal certainty needed to incentivise measures aimed at advancing renewable energy. Even if extending the application of Article XX to the SCM Agreement would certainly give states more room to justify the measures they have put in place, it would not provide any reassurance as to the actual admissibility by the Panel and Appellate Body of such justifications, and it has already been extensively discussed how critical it is to leave the regulation of such measures in the hands of the DSM and its propensity to interpret the exceptions contained in the WTO Agreements in a strict and rigid manner. Indeed, it is unclear whether such an extension would guarantee a policy space for trade-distorting renewable energy subsidies, especially given the need to comply with the chapeau of Article XX, and under which circumstances a subsidy pursuing environmental and industrial objectives would comply with these requirements¹⁴⁴. Finally, a mere extension of these exceptions, without changes in their content, could even have counterproductive effects with regard to combating climate change. Applying Article XX to the SCM Agreement, the exceptions contained therein could be invoked to justify any subsidy, not only those aimed at promoting renewable energies, but also those in favour of polluting or even more trade-distorting industrial policies.

Intuitively, another possible reform to be considered concerns the possibility of reviving the former Article 8 SCM Agreement. Although the rationale behind some exceptions such as that contained in paragraph 8:2, namely, to facilitate society's transition to a more sustainable future, is of paramount importance and to be taken into account in future WTO reforms, its resurrection may not guarantee the desired effects. As a matter of fact, in its entirety Article 8 was not designed keeping the protection of the environment as the main objective. This means that bringing it back into its original form would significantly restrict the scope of non-approved subsidies and would not be particularly useful for WTO members to introduce national measures to support their industry of renewable energy, mainly because of the limited scope, the strict eligibility criteria and the onerous procedures that characterize the article¹⁴⁵. Indeed, over the past decade, several scholars have argued for its reintroduction, but with the majority in favour of broadening the scope of permissible environmental subsidies¹⁴⁶. Over time, numerous proposals have been made such as that of integrating the category of non-actionable green light subsidy into Article 8 which help "foster the shift toward cleaner

¹⁴⁴ Howse, R. (2010). Climate mitigation Subsidies and the WTO Legal Framework: A Policy Analysis. IISD, 6.

¹⁴⁵ Cosbey, A., Mavroidis, P. C. (2014). A Turquoise Mess: Green Subsidies, Blue Industrial Policy and Renewable Energy: The Case for Redrafting the Subsidies Agreement of the WTO. Robert Schuman Centre for Advanced Studies Research Paper No. 2014/17, Columbia Law and Economics Working Paper No. 473.

¹⁴⁶ Wu, M., & Salzman, J. (2014). The Next Generation of Trade and Environment Conflicts: The Rise of Green Industrial Policy. Northwestern University Law Review, 108(2).

production alternatives” as well as “payment for environmental services” performed by rural communities in developing countries¹⁴⁷. However, little progress has been made in the negotiations, despite the Doha Ministerial giving permission to consider such proposals¹⁴⁸.

The last reform proposal to be considered with regard to the SCM Agreement, and perhaps the most desirable, is to design and implement a new exception or exemption clause that is significantly broader than those contained in Article XX GATT and Article 8 SCM Agreement. This kind of proposal would require a major amendment of the subsidy agreement, and this would clearly clash with the very long negotiation time within the WTO, which would most likely not allow for optimal results within a reasonable timeframe. At the same time, however, there would be room to regulate green subsidies as comprehensively as possible, in order to allow certain good renewable energy subsidies to be non-actionable. In this sense, the optimal solution would be for such subsidies to be immune from challenges in WTO dispute settlements, provided their distorting impact on free trade is not excessive or disproportionate to the environmental benefit they bring. The critical and fundamental point would be to strike the right balance between the pressing need to take measures to facilitate the fight against climate change and the need not to cause excessive market distortion, which certainly could not be accepted by the WTO regime.

Moving slightly away from the SCM Agreement, the best option to fill the policy space in renewable energy governance is to negotiate a new sectoral agreement precisely on measures to support renewable energy, or better, an energy framework agreement. Clearly, the broader the scope of the agreement, the more difficult it becomes to create the necessary consensus for these reforms to actually be implemented or to produce results within a reasonable timeframe. As Professor Taraborrelli points out¹⁴⁹, it is very difficult for states to engage in agreements that include a limitation of their sovereignty, or place constraints, with regard to a sector as strategic as energy, all the more so since the new international dynamics seem to require ever greater autonomy in energy supply. Such an agreement is long overdue but unrealistic under the current political climate in the multilateral trading system¹⁵⁰, so even reforms that would require less effort, such as amending the SCM Agreement, would be difficult, controversial, time-consuming, and ultimately highly unlikely¹⁵¹. The bottom line is that, although the different solutions analysed so far differ in their feasibility and the degree of protection they would offer to renewable energy incentive measures, they are based on the political will and determination on the part of WTO Members and the international community. Therefore,

¹⁴⁷ Ayala, F. & Gallagher, K. (2005). Preserving Policy Space for Sustainable Development: The Subsidies Agreement at the WTO - Full Report.

¹⁴⁸ Wu, M., & Salzman, J. (2014). The Next Generation of Trade and Environment Conflicts: The Rise of Green Industrial Policy. *Northwestern University Law Review*, 108(2).

¹⁴⁹ See section 4.1 of this work.

¹⁵⁰ Asmelash, H. (2022). The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures: Has the Dust Settled Yet? *World Trade Review*, 21(4), 455-478.

¹⁵¹ Borlini, L., & Dordi, C. (2018). Deepening International Systems of Subsidy Control: The (Different) Legal Regimes of Subsidies in the EU Bilateral Preferential Trade Agreements. *Columbia Journal of European Law*, 23, 647-650.

the real fundamental condition that needs to occur for such reforms to become feasible is a change of mindset in the way members negotiate within the WTO. As Dr Elena Cima notes¹⁵², the mentality that characterises the approach to policy objectives and negotiations within the WTO is still closely linked to the prevalence of free competition concerns at the expense of considerations such as environmental or social ones. Moreover, historically, negotiations within the WTO are a complex process of compromises and concessions, in which individual states often play as individual actors aiming solely at maximising their own utility. Again, when it has been necessary to put up a united front on issues of particular importance, they have divided on the basis of their status as developed or developing countries. Hence, the logical conclusion of a necessary change of mentality. When it comes to negotiating on issues such as global common goods, such as a healthy environment, clean air and climate change mitigation, excessively utilitarian calculations cannot be allowed and it is necessary to listen to the demands of all countries, starting with the least developing countries, which also represent the majority of the WTO membership¹⁵³.

According to Dr Cima, however, the ideal time for a possible but difficult reform could be right now. In the interview conducted, as a matter of fact, the great strides in the negotiation modality regarding the Agreement on Fisheries Subsidies are underlined¹⁵⁴. The WTO Agreement on Fisheries Subsidies was adopted at the 12th Ministerial Conference in June 2022, after negotiations that lasted more than twenty years, and achieved the goal of prohibiting harmful fisheries subsidies, a factor that was contributing greatly to the massive exploitation of the world's fish stocks, helping to achieve greater ocean sustainability.

The Agreement is a historic accomplishment for the membership because it is only the second agreement reached at the WTO since its founding, the first multilateral agreement to focus on the environment, the first broad, binding agreement on ocean sustainability, and the first target of a sustainable development goal to be fully met¹⁵⁵. Some commentators¹⁵⁶ have often used the more than two decades of negotiations to reach such an agreement as an example to reiterate the impossibility of addressing climate change through a new agreement on measures to support renewables within the multilateral trading system, emphasising the futility of reaching a compromise if it takes years and years of negotiation. However, what must be emphasised is that in recent years negotiations have largely accelerated, finally allowing the first WTO-wide agreement with explicitly environmental aims and content to be reached. This has been possible precisely because of a marked change in the way and mindset of states in the negotiations. The requests of all states, irrespective of their specific geopolitical weight, were accepted and taken into account, according to the principle of common but differentiated responsibilities (CBDRs), and this made it possible to achieve an almost unhopd-for result.

¹⁵² See section 4.2 of this work.

¹⁵³ Ibid.

¹⁵⁴ Ibid.

¹⁵⁵ *World Trade Organization Website*. Agreement on Fisheries Subsidies.

¹⁵⁶ Asmelash, H. (2022). The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures: Has the Dust Settled Yet? *World Trade Review*, 21(4), 455-478.

Any future negotiations involving environmental objectives should therefore take into account what is advanced by the Agreement on Fisheries Subsidies. Specifically, CBDRs play a key role in any multilateral environmental agreement. As an extension of the principle of equity, they find their formulation in Principle 7 of the Rio Declaration, stating that: “In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities”¹⁵⁷. In other words, it calls for developed nations to not only take the initiative in addressing climate change and its effects, but also to provide developing nations with the resources, know-how, and leadership necessary to do so¹⁵⁸. This kind of consideration is crucial for achieving satisfactory results in environmental negotiations, as it is a crucial prerequisite for involving the Least Developed Countries (LDCs) and avoiding impasses and very long negotiation times, since, and it is worth mentioning again, these states always represent the majority of WTO members. Despite this, its status as an emerging principle of customary international law is not yet well defined. Although it has played a significant role in treaty law and other soft law instruments, it has not been stated in terms that are legally binding. As a matter of fact, developed nations like the United States have resisted applying any interpretation of the principle that would entail a duty to respect the rights of developing nations under international law.¹⁵⁹

Moreover, despite the fact that some member states have complained about the violation of this principle under WTO law, there is never any mention of CBDR in the WTO Agreements. The motivation is clearly in the fact that implementing this notion in WTO governance would clearly clash with the cardinal principle of the multilateral trading system, i.e. that of non-discrimination, whereas the CBDR is based precisely on a discrimination that therefore cannot be accepted, no matter how fair or equitable it may be. Thus, incorporating the principle of CBDR at the treaty level seems, to date, extremely unlikely. What is not prevented, however, and could be helpful in advancing regulation in favour of environmental objectives, is to take this principle into account and operationalise it as far as possible in the fora of negotiations, just as the lesson of the Agreement on Fisheries Subsidies teaches.

In conclusion, although implementing possible reforms such as the ones discussed so far remains a far from simple task, we can argue that we are witnessing a slow but steady shift in the mindset of states towards a growing concern and awareness about goals that should be priorities such as combating climate change, making such hypotheses certainly more and more worthy of consideration. As Dr Cima notes¹⁶⁰, this is demonstrated by recent developments on fisheries subsidies and the increasingly open attitude found in the launch of initiatives such as the Trade and Environmental Sustainability Structured Discussions (TESSD),

¹⁵⁷ See 1992 Rio Declaration on Environment and Development, adopted in the United Nations Conference on Environment and Development, adopted on 14 June 1992.

¹⁵⁸ Kartikeya, G. (2022). The “Common but Differentiated Responsibilities” – WTO Conundrum, *Opinio Juris*.

¹⁵⁹ *Ibid.*

¹⁶⁰ See section 4.2 of this work.

the Informal Dialogue on Plastics Pollution and Sustainable Plastics Trade (IDP), as well as the Fossil Fuel Subsidy Reform (FFSR).

4.4 *Is the solution really in the hands of the WTO?*

In the light of the above discussion, from the interviews conducted¹⁶¹, it is clear that individual states could play an important role in overcoming the incompatibilities that arise when WTO rules interface with such incentive measures.

As a matter of fact, it can be reasonably argued that the quickest way to overcome such incompatibilities would be for states to design ‘WTO-proof’ incentive measures, i.e., provisions that avoid as much as possible blatantly discriminatory content such as the LCR. While the measures considered in the preceding section would provide an optimal solution in terms of legal certainty, they are flawed from the point of view of timing. Instead, individual states could design WTO-compliant measures from the outset, providing a much more agile and rapid solution, perhaps even while waiting for a more structured reform. Both Professor Taraborrelli and Dr Cima, while supporting the need for internal WTO reform action, support the need for parallel action by individual states¹⁶².

First of all, as Cima points out, already removing the LCR, which has been seen to be particularly opposed by the DSM and at the basis of many of the challenged measures, from these measures would significantly contribute to removing many renewable energy incentives from the Appellate Body’s spotlight. The point is that, as already mentioned, LCRs respond to a purely economic and not environmental rationality, which makes it a clause that is difficult to justify in the eyes of the WTO. Furthermore, as regards to their effectiveness at an economic level, and therefore how harmful it would be to exclude them from measures incentivising renewable energy, the discussion is very complex and requires much more articulate and defined economic analyses than could be conducted here. Here suffice it to say that LCR policies are an excellent instrument to achieve short to medium term goals, such as the protection of infant domestic industries or the creation of employment in the short term, however, they risk having effects that are far from desirable in the long term¹⁶³. LCRs undermine long-term competitiveness and reduce job growth and opportunities to achieve economies of scale, undermining the original goals for imposing the LCR. They might also result in a fall in imports and exports on a global scale, affecting not only trading partners but even the dominant economy. Additionally, when industries that gain from the LCR use up more domestic resources, other sectors are compelled to cut production or boost imports, which causes a concentration of domestic economic activity. In the end, this approach erodes the chances for innovation and growth that come from a vibrant, varied

¹⁶¹ See sections 4.1 and 4.2 of this work.

¹⁶² Ibid.

¹⁶³ Ing, L. Y., Losari, J. J. (2022). Local Content Requirements: Assessment from Investment Law. ERIA Discussion Paper Series, No. 416.

economy¹⁶⁴. In short, their distorting impact on economics and their potential benefits still remain a highly controversial issue, so, for now, they can certainly be removed from any future incentive schemes.

Moreover, alternative solutions available to states do exist and are certainly feasible. First, member states are required to notify the WTO of the various measures they have put in place to achieve their trade policy objectives, and, in the environmental sphere, these are collected in the WTO's Environmental Database. To date, the Database contains 16854 environmental-related measures, of which only 7899 have been notified¹⁶⁵. The database gathers all types of measures with environmental content. Of these, energy-oriented measures account for a significant share of the total, with 10.6% of measures supporting alternative and renewable energy, and 13.0% of measures oriented towards energy conservation and efficiency, for a total of 3974 measures in place¹⁶⁶. When compared with the measures that were then challenged at the WTO level, 9 as of November 2021¹⁶⁷, although an extremely relevant number for the purposes of the doctrine and as disputes that are based on such a specific subject matter, it emerges that they are only a fraction of the measures implemented by individual states. Hence, two fundamental implications. The first is that, in the face of these numbers, it remains difficult to claim that WTO governance is really hindering the adoption of measures in favour of renewable energies, but rather that it has so far failed to actively embrace this fundamental need of climate change mitigation. The second is that, given the difference between challenged measures and those left free to act, it can be reasonably argued that states often put in place measures that are entirely compatible with WTO governance, except for those that, although potentially incompatible, have simply not been challenged by other member states.

In this, a possible solution, as suggested by Professor Taraborrelli¹⁶⁸, that would allow states to invest by incentivising renewable energy, is to proceed with tenders for the supply of energy produced from renewable sources. With this procedure, a large investment tied to the supply of energy produced from renewable sources would be injected into the market, which would, among other things, have the effect of stimulating production and consequently expanding the share of renewable energy in the national energy mix. In addition, the tender would be awarded, in full respect of free competition and without particularly distorting measures, to the supplier offering the lowest price, which the state undertakes to pay, and consequently assuming the risk of the transaction.

To conclude, the WTO should play a prominent role in advancing renewable energies, but while waiting for a change in the Organisation, which is slowly but surely taking place, the role that individual states can

¹⁶⁴ Stone, S., J. Messent and D. Flaig (2015). *Emerging Policy Issues: Localisation Barriers to Trade*. OECD Trade Policy Papers, No. 180, OECD Publishing, Paris.

¹⁶⁵ *World Trade Organization Website*. Environmental Database.

¹⁶⁶ *Ibid*.

¹⁶⁷ Asmelash, H. (2022). The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures: Has the Dust Settled Yet? *World Trade Review*, 21(4), 455-478.

¹⁶⁸ See section 4.1 of this work.

play through their national policies in order to implement measures aimed at climate change mitigation without running into incompatibility with the WTO system remains fundamental and of primary importance. Therefore, action is needed on both tracks, that of the state as a unitary actor and primarily the multilateral one of the WTO. For the Geneva Organisation, the issue goes far beyond the actual impact of its provisions on the freedom of states to take measures to pursue particularly relevant policy objectives. The WTO's efforts to incorporate the focus on environmental, rather than social, issues within its framework is crucial to show the international community a new approach of openness to these issues that will only become of increasing concern to the entire international system in the future.

Chapter V

Conclusions

The thesis examined the treatment of measures aimed at incentivising renewable energies, and more generally climate change mitigation, within WTO governance in order to understand the state of the art and future developments through a review of current legislation and the analysis of case studies.

From the analysis conducted, it emerges that the WTO's legal framework is not yet equipped with the necessary tools to address and regulate a sector as complex, and at the same time, as strategic for individual states as energy. Specifically, energy, and even more so its renewable declination, is treated by WTO governance in the same way as any other good and service despite its considerable peculiarities. As a result, energy is framed in GATT governance if configured as good, in GATS if recognised as a service, just as subsidies and investments aimed at the sector fall under the authority of the SCM Agreement and TRIMs. Since these Agreements were not designed with the specific objective of regulating the energy industry, they have found themselves incapable of providing an efficient energy regulatory framework capable of providing the legal certainty needed to encourage the energy transition to renewable sources.

Hence the dangerous incompatibility between renewable energy incentive measures and WTO rules that emerged in the two disputes analysed *Canada - Renewable Energy/FITs* and *India - Solar Cells*. As a matter of fact, in both cases, measures aimed at incentivising renewable energies, specifically FITs, were first challenged through the WTO's DSM, and then judged incompatible with its governance by virtue of their discriminatory content. Hence, in the absence of a specific regulation of the matter, the fate of these measures depends solely on the interpretation of the rules by the Panel and Appellate Body. It is true that these bodies have in the past played a fundamental role in the creation of policy space for the pursuit of non-trade-related objectives such as the fight against climate change, but they are far from being without criticism or capable of ensuring legal certainty. In addition, the few openings created by the Appellate Body in the disputes analysed did not have the desired effect either in the cases themselves or in future case law.

However, to assert that the current WTO governance is hindering the adoption of measures to incentivise renewable energy is a far-fetched assumption at best, rather it is argued that it is not doing enough to facilitate the creation of the policy space necessary for the implementation of measures to correct the greatest market failure of our time, namely climate change. As a matter of fact, it emerged that there are very few challenged measures within the WTO compared to those implemented by member states that have not been the basis of disputes. In the disputes analysed, it emerges that it is not so much the environmental rationale that conflicts with the law of the Organisation, but the economic rationale, frequently expressed in the form of LCR clauses, whose positive effects in the short term and negative effects in the long term would need to be taken into account from time to time in the DSM assessments.

However, this finding, as relevant as it may be in the debate in the doctrine that has looked very carefully at the compatibility of renewable energy incentive schemes with the WTO system, does not make it any less necessary for the Organisation to embrace and make itself permeable to such instances. Indeed, the indissoluble link between climate change and international trade has already been amply emphasised, and how much the latter can still exacerbate it, but above all how it can also be a formidable tool for combating it. It is precisely the WTO, which in fact is the maximum tangible expression of free trade, that should set itself up as a pioneer of a paradigm shift, increasingly open and attentive to environmental and social issues, which in an increasingly interconnected world full of new challenges, will play an increasingly important role in the future. Showing a new footprint to the international community and recovering that central role that has been slowly eroded by the push towards localism to the detriment of the multilateral system.

In this regard, the need for action on two tracks, running in parallel towards the same goal, has been affirmed, both at the level of individual states and at the multilateral level. On the one hand, individual states, when designing incentive measures, should limit their discriminatory content as much as possible. Alternative solutions are possible and feasible, such as using tenders that can incentivise and promote the adoption of an increasing share of renewable energy within a state's energy mix without distorting free competition. On the other hand, a change of mindset is needed in the way WTO negotiations are conducted. Possible solutions are wide-ranging and address the problem with varying degrees of efficiency and feasibility. However, they require a strong and decisive political will to actually be implemented. An ad hoc agreement that could deal with environmental issues in their entirety would be the optimal solution, however, it does not seem feasible for the time being if environmental concerns do not prevail over purely economic ones.

In the recent period, something seems to be changing in the Geneva Organisation, it is showing itself to be more and more attentive and present towards these issues, as the historic result of the Fisheries Subsidies Agreement demonstrates. It only remains to be hoped that this process does not come to a halt and can become the new negotiating paradigm within the WTO.

Bibliography

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

DSU, Dispute Settlement Rules: Understanding on Rules and Procedures Governing the Settlement of Disputes, Marrakesh Agreement Establishing the World Trade Organization, Annex 2, 1869 U.N.T.S. 401, 33 I.L.M. 1226 (1994).

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)

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).

TRIMS Agreement: Agreement on Trade-Related Investment Measures, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1868 U.N.T.S. 186.

WTO Agreement: Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 1867 U.N.T.S. 154, 33 I.L.M. 1144 (1994).

WTO. Agreement on Fisheries Subsidies, adopted on 17 June 2022.

WTO Appellate Body Report, Brazil – Measures Affecting Imports of Retreaded Tyres (Brazil - Retreaded Tyres), adopted 17 December 2007.

WTO Appellate Body Report, Canada – Certain Measures Affecting the Renewable Energy Generation Sector, and Canada – Measures Relating to the Feed-in Tariff Program, adopted 6 May 2013.

WTO Panel Report, Thailand – Restrictions on the Importation of and Internal Taxes on Cigarettes (Thailand – Cigarettes), adopted 7 November 1990.

WTO Panel Report, US – Gasoline, adopted 29 January 1996.

WTO Panel Report, India – Certain Measures Relating to Solar Cells and Solar Modules, adopted 24 February 2016.

1992 Rio Declaration on Environment and Development, adopted in the United Nations Conference on Environment and Development, adopted on 14 June 1992.

Adelman, M. A. (2002). World oil production & prices 1947-2000, *The Quarterly Review of Economics and Finance*, 170.

Ayala, F. & Gallagher, K. (2005). Preserving Policy Space for Sustainable Development: The Subsidies Agreement at the WTO - Full Report.

Asmelash, H.B. (2015). Energy Subsidies and WTO Dispute Settlement: Why Only Renewable Energy Subsidies Are Challenged, *Journal of International Economic Law*, Volume 18 261–285.

Asmelash, H. (2022). The First Ten Years of WTO Jurisprudence on Renewable Energy Support Measures: Has the Dust Settled Yet? *World Trade Review*, 21(4), 455-478.

- Bhagwati, J., & Mavroidis, P. (2007). Is action against US exports for failure to sign Kyoto Protocol WTO-legal? *World Trade Review*, 6(2), 299-310.
- Bigdeli, S. Z. (2011). Resurrecting the dead the expired non-actionable subsidies and the lingering question of green space. *Manchester Journal of International Economic Law*, 8(2), 2-37.
- Birhanu Asmelash, H. (2014). Energy Subsidies and WTO Dispute Settlement: Why Only Renewable Energy Subsidies Are Challenged, *Journal of International Economic Law*, Volume 18, Issue 2, June 2015, Pages 261–285.
- Borlini, L., & Dordi, C. (2018). Deepening International Systems of Subsidy Control: The (Different) Legal Regimes of Subsidies in the EU Bilateral Preferential Trade Agreements. *Columbia Journal of European Law*, 23, 647–650.
- Chen, X., Woodland, A. (2013). International trade and climate change. *Int Tax Public Finance* 20, 381–413.
- Cima, E. (2017). Caught between WTO Rules and Climate Change: The Economic Rationale of ‘Green’ Subsidies, in Mathis K., & Huber, B.R. (eds.), *Environmental Law and Economics*, Springer.
- Copeland, B. R., & Taylor, M. S. (1995). ‘Trade and Transboundary Pollution’. *American Economic Review*, 85 (4), 716–737.
- Copeland, B. R., & Taylor, M. S. (1999). Trade, spatial separation, and the environment. *Journal of International Economics*, 47(1), 137–168.
- Cottier, T., Malumfashi, G., Matteotti-Berkutova, S., Nartova, O., De Sépibus, J., & Bigdeli, S. (2011). Energy in WTO law and policy. In T. Cottier & P. Delimatsis (Eds.), *The Prospects of International Trade Regulation: From Fragmentation to Coherence* (pp. 211-244). Cambridge: Cambridge University Press.
- Cottier, T. (2014). Renewable Energy and WTO Law: More Policy Space or Enhanced Disciplines? *Renewable Energy Law and Policy Review*, 5(1), 40–51.
- Cosbey, A., Droege, S., Fischer, C., & Munnings, C. (2019). ‘Developing Guidance for Implementing Border Carbon Adjustments: Lessons, Cautions, and Research Needs From the Literature. *Review of Environmental Economics and Policy*, 13 (1), 3–22.
- Cosbey, A., Mavroidis, P. C. (2014). A Turquoise Mess: Green Subsidies, Blue Industrial Policy and Renewable Energy: The Case for Redrafting the Subsidies Agreement of the WTO. Robert Schuman Centre for Advanced Studies Research Paper No. 2014/17, Columbia Law and Economics Working Paper No. 473.
- Dadush, U. (2022). The future of global value chains and the role of the WTO. *Journal Article, WTO*.
- Deschenes, O., & Greenstone, M. (2007). The economic impacts of climate change: evidence from agricultural output and random fluctuations in weather. *American Economic Review*, 97(1), 354–385.
- Farah D. P., Cima E. (2013). Energy Trade and the WTO: Implications for Renewable Energy and the OPEC Cartel, *Journal of International Economic Law*, Volume 16, Issue 3, 707–740.
- Gahrens, S., Alessandra, S., & Steinfatt, K. (2021). Trading Into a Bright Energy Future. *World Trade Organization (WTO)*.

- Georgiou, N.A. (2017). Energy Regulation in International Trade: Legal Challenges in EU–Russia Energy Relations from an Investment Protection Perspective. In: Adinolfi, G., Baetens, F., Caiado, J., Lupone, A., Micara, A. (eds) *International Economic Law*. Springer, Cham.
- Gowa, J., & Hicks, R. (2012). The most-favored nation rule in principle and practice: Discrimination in the GATT. *The Review of International Organizations*, 7(3), 247-266.
- Hajdukiewicz, A., & Pera, B. (2020). International Trade Disputes over Renewable Energy—the Case of the Solar Photovoltaic Sector. *Energies*, 13(2), 500.
- Horn, H. & Mavroidis, P. (2011). To B(TA) or not to B(TA)? On the Legality and Desirability of Border Tax Adjustments from a Trade Perspective. *The World Economy*. 34. 1911-1937.
- Horowitz, C. (2016). Paris Agreement. *International Legal Materials*, 55(4), 740-755.
- Howse, R. (2010). Climate mitigation Subsidies and the WTO Legal Framework: A Policy Analysis. IISD, 6.
- Ing, L. Y., Losari, J. J. (2022). Local Content Requirements: Assessment from Investment Law. ERIA Discussion Paper Series, No. 416.
- Jackson, J. H., Hudec, R. E., & Davis, D. (2000). The Role and Effectiveness of the WTO Dispute Settlement Mechanism [with Comments and Discussion]. *Brookings Trade Forum*, 179–236.
- Jayagovind, A. (2016). Missing the wood for the trees: a critique of the WTO ruling in India: solar cells and modules. *Indian Journal of International Law* 56, 201–220
- Jakob, M. (Eds.). (2022). *Handbook on Trade Policy and Climate Change*. Cheltenham, UK: Edward Elgar Publishing.
- Jensen, S., Mohlin, K., Pittel, K., & Sterner, T. (2015). ‘An Introduction to the Green Paradox: The Unintended Consequences of Climate Policies’. *Review of Environmental Economics and Policy*, 9 (2), 246-265.
- Johannesson, J., & Clowes, D. (2022). Energy Resources and Markets – Perspectives on the Russia–Ukraine War. *European Review*, 30(1), 4-23.
- Kartikeya, G. (2022). The “Common but Differentiated Responsibilities” – WTO Conundrum, *Opinio Juris*.
- Karttunen, M., & Moore, M. (2018). India–Solar Cells: Trade Rules, Climate Policy, and Sustainable Development Goals. *World Trade Review*, 17(2), 215-237.
- Keohane, R. O., & Victor, D. G. (2011). ‘The Regime Complex for Climate Change. Perspectives on Politics’. *Perspectives on Politics*, 9 (1), 7–23.
- Kotzampasakis, M., & Energy and Climate Law, L. L. M. (2020). The WTO Appellate Body Crisis: a legal assessment in search of a solution. *University of Groningen*.
- Kucheriava, Y. (2022). Russia’s Invasion of Ukraine: A WTO Perspective, 17, *Global Trade and Customs Journal*, Issue 10, pp. 417-430.

- Kulovesi, K. (2014). International Trade Disputes on Renewable Energy. *Rev Euro Comp & Int Env Law*, 23, 342-353.
- Lamy, P. (2011) 'Trade and Energy: The Case for a Greater WTO Role' in *The Geneva Consensus: Making Trade Work for All*, 121.
- Low, P. (2015). *Strengthening the Global Trade and Investment System for Sustainable Development*, 12.
- Marceau, G. (2010). The WTO in the Emerging Energy Governance Debate. *Global Challenges at the Intersection of Trade, Energy and Environment*.
- Marceau, G. (2020). Never Waste a Good Crisis, *International Organizations Law Review*, 17(2), 345-349.
- Marhold, A. (2013). The World Trade Organization and Energy: Fuel for Debate. *European Society of International Law (ESIL) Reflections*, Volume 2, Issue 8.
- Marhold, A. (2021). *Energy in International Trade Law: Concepts, Regulation and Changing Markets (Cambridge International Trade and Economic Law)*. Cambridge: Cambridge University Press.
- Mavroidis, P. C.; Bermann, G. A.; Wu, M. (2011). *The Law of the World Trade Organization (WTO): Documents, Cases, and Analysis*.
- Nicolini M., Tavoni M. (2017). Are renewable energy subsidies effective? Evidence from Europe. *Renewable and Sustainable Energy Reviews*, 412-423.
- Pal, R. (2014). Has the Appellate Body's Decision in Canada – Renewable Energy/Canada – Feed-in Tariff Program Opened the Door for Production Subsidies? *Journal of International Economic Law*, v. 17, n. 1.
- Pauwelyn, J. (2019). WTO Dispute Settlement Post 2019: What to Expect? *22 JIEL* 297, 301.
- REN21 (2021). *Renewables 2020 Global Status Report*. REN21, Paris.
- Rao, P. K. (2012). *International trade policies and climate change governance*. Springer Science & Business Media.
- Ritchie, H. (2019). Who Has Contributed Most to Global CO2 Emissions? *Our World in Data*.
- Rubini, L. (2011). *The Subsidization of Renewable Energy in the WTO: Issues and Perspectives*.
- Rubini, L (2014). 'The Good, the Bad, and the Ugly.' Lessons on Methodology in Legal Analysis from the Recent WTO Litigation on Renewable Energy Subsidies', (2014), 48, *Journal of World Trade*, Issue 5, pp. 895-938.
- Rubini, L. (2015). *ASCM Disciplines and Recent WTO Case Law Developments: What Space for 'Green' Subsidies?* Robert Schuman Centre, European University Institute.
- Scalia F. (2022). La compatibilità dei regimi incentivanti l'energia sostenibile con il sistema WTO. *Revista da Faculdade de Direito UFPR, Curitiba*, v. 66, n. 3, 97-151.

- Selivanova, J. (2007). *The WTO and Energy: WTO Rules and Agreements of Relevance to the Energy Sector*, ICTSD Trade and Sustainable Energy Series Issue Paper No. 1, International Centre for Trade and Sustainable Development, Geneva, Switzerland.
- Selivanova, Y (2010). *Challenges for Multilateral Energy Trade Regulation: WTO and Energy*. Society of International Economic Law (SIEL), Second Biennial Global Conference, University of Barcelona.
- Shaffer G. et al. (2016). *The Extensive (But Fragile) Authority of the WTO Appellate Body*, *Law and Contemporary Problems*, 237-273.
- Stone, S., J. Messent and D. Flaig (2015). *Emerging Policy Issues: Localisation Barriers to Trade*. OECD Trade Policy Papers, No. 180, OECD Publishing, Paris.
- Tajoli, L. (2019). *Le guerre dei dazi: verso la fine della Wto?* 65-76.
- Van Damme, I. (2010). *Treaty Interpretation by the WTO Appellate Body*, *European Journal of International Law*, Volume 21, Issue 3, Pages 605–648.
- Weiler J.H.H., Cho S., Feichtner I., Arato J. (2017). *International and Regional Trade Law: The Law of the World Trade Organization*.
- Weiss, W. (2003). *Security and predictability under WTO law*. *World Trade Review*, 2(2), 183-219.
- WTO (2009). *World trade report 2009: trade in a globalizing world*. WTO, Geneva.
- WTO (2015). *Understanding The WTO*. WTO, Geneva.
- WTO (2022). *World trade report 2022: climate change and international trade*. WTO, Geneva.
- Weiss, W. (2003). *Security and predictability under WTO law*. *World Trade Review*, 2(2), 183-219.
- Wu, M., & Salzman, J. (2014). *The Next Generation of Trade and Environment Conflicts: The Rise of Green Industrial Policy*. *Northwestern University Law Review*, 108(2).
- Wu, M. (2014). 'Why Developing Countries Won't Negotiate: The Case of the WTO Environmental Goods Agreement'. *Trade, Law and Development*, 6 (1), 93.
- World Trade Organization website*. Energy services.
- World Trade Organization Website*. Environmental Database.
- World Trade Organization website*. National environmental policies and multilateral trade rules.
- World Trade Organization website*. Services: rules for growth and investment.
- World Trade Organization website*. Understanding on Rules and Procedures Governing the Settlement of Disputes.
- World Trade Organization Website*. WTO Membership.

Thesis Summary

1. Introduction

Growing concerns about climate change and recent events involving Russia and Ukraine have brought the debate on energy back to the centre of the international forum. Indeed, energy is a necessary input for economic activity, and having access to a stable and affordable energy supply is crucial for the advancement of society and the economy. It is more necessary than ever that it is also renewable and sustainable. Hence, the shift to renewable energy is key to decarbonisation of economies and in order to achieve effective results addressing global warming. Building on this reflection, this research aims to examine the role of the World Trade Organization (WTO) in promoting renewable energy through the analysis of case studies. Thus, after highlighting the critical issues affecting renewable energy governance, the aim is to formulate possible reforms of the WTO's energy legislative framework. Indeed, regulation of energy is fragmented and essentially incoherent, and often this leads to a regulation that risks running counter to desirable results. It is therefore crucial to find a solution that can offer a coherent framework to deal with renewable energy related issue as climate change and carbon neutrality within the WTO itself.

International trade can play a key role in both worsening and combating climate change. Specifically, the WTO has a key role to play in promoting more sustainable trade, in particular by favouring green products and promoting the development of renewable energy. However, it seems equally clear that the WTO, despite slowly becoming more open to environmental concerns, is still far from effectively asserting the dominance of such concerns over the protection of free trade. This is leading to situations where provisions aimed at favouring the development of renewable energies are judged discriminatory and therefore inadmissible, disregarding the current climate crisis, which should instead be a top priority. Negotiating an environmental agreement would certainly be the preferable solution, but it would be difficult to do so given the long time it would take, whereas a rapid response is absolutely necessary.

In this study, the approach adopted is qualitative, and consists of a theoretical, an empirical, and a critical part. The theoretical section, comprising Chapter I and Chapter II, is a fundamental building block and the necessary starting point for a proper understanding of this work. Chapter III contains the empirical section of this work. As a matter of fact, the purpose of this chapter is to analyse some of the most important renewable energy disputes within the WTO framework in order to understand the role that the WTO is actually playing in promoting or not promoting renewables. Finally, Chapter IV critically discusses the empirical evidence that has emerged so far. With the contribution, through interviews conducted, of two other energy and international organisations experts.

The research advances some proposals for reform along the doctrinal debate and recent regulatory developments.

2. The Regulatory Framework

Although the WTO was formally founded in 1995, its trade system dates back more than fifty years. The General Agreement on Tariffs and Trade (GATT), which was established in 1948, has set the system's guidelines. The General Agreement quickly established a de facto international body known as GATT. GATT has changed throughout time as a result of several rounds of negotiations. The Uruguay Round, which took place between 1986 and 1994 and resulted in the establishment of the WTO, was the final and most significant GATT round. A new General Agreement on Tariffs and Trade (GATT 1994) was signed, but the regulation aims expanded into services and intellectual property rights too, with two more agreements under the WTO umbrella: The General Agreement on Trade in Services (GATS) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).

Regarding energy regulation, there was originally a perception that the GATT provisions did not apply to trade in energy at all. This perception was mostly caused by the fact that, up until the 1980s, the majority of nations producing energy were not yet GATT contracting parties. However, it is now widely acknowledged that energy products are subject to the same WTO rules. Since basic WTO rules are applicable to all forms of trade, they also apply to trade in energy goods and services, and this clearly also applies to renewables. In short, the provisions of the WTO apply to the energy sector, treating it in exactly the same way as all other matters regulated by the Organisation, despite the fact that it is clear that energy has special characteristics and strategic importance from other forms of international trade.

The fact that energy has been treated in the same way as all other goods in the agreements, and the general fragmentation of regulation that this implies, has left many questions unanswered. For example, on the variables defining the concept of like products when it comes to non-discrimination, or whether fossil fuels and renewables should be treated equally. Moreover, since the word 'energy' does not appear a single time in the agreements of the WTO framework, there is still no legal definition of energy and, consequently, no definition of trade in energy goods and services as far as GATT and GATS are concerned. There are also questions over whether energy should be defined as a good, that is covered by the GATT, or a service, that is covered by the GATS, and this distinction shouldn't be taken lightly because the treatment under the two agreements is very different. Additionally, due to their complexity, many energy sources also involve features of trade in both products and services.

The Doha Round attempted to address these issues, reaffirming the fundamental role that the WTO had to play in energy governance. However, as already mentioned, the negotiations on the basis of the Doha Development Agenda are completely stalled and almost to be considered de facto over, with no concrete steps forward made regarding the regulation of the energy field. Yet the Doha Round saw the energy sector being discussed for the first time as a specific service sector, demonstrating how energy regulation has been definitively and officially embraced by the WTO.

The GATT regulates international trade of goods. It therefore also applies to trade in energy when it includes goods. For example, it is not only relevant when considering energy itself as a good, but for the purposes of empirical analysis, it is relevant when dealing with measures that have an impact on trade in components for the construction or implementation of energy production systems, in this case, renewable energy. The principle of non-discrimination concerns the entire WTO framework; however, it is in the GATT that it is present in its highest expression. In particular, it has an extremely prominent position: Article I regulates the “Most Favoured Nation Treatment”, whereas Article III concerns the National Treatment. In a very plain form, Article I:1 GATT declares that any advantage, favour, privilege, or immunity granted by a contracting party shall be extended to the like products of other contracting parties “immediately and unconditionally”. Article III:2 GATT, on the other hand, requires that when goods enter the territory of another WTO member, they may not be treated less favourably than ‘like’ domestic products. A controversial, but crucial, point concerns the definition of ‘like product’. As a matter of fact, discrimination is illegal as far as the two products are ‘like’. Since the admissibility or not of tariffs, or of discriminatory behaviours, closely depends on whether they are similar products, a strict or a loose interpretation of the term ‘like product’ may have a decisive impact on the jurisdiction and regulation of the principle. When it comes to energy, the concept of like products is fundamental, and many questions are still unanswered. For example, should we consider energy produced from renewable sources a like product to that produced instead from fossil fuels and therefore particularly polluting? In fact, the result would be the same, we would still be dealing with two sources of energy, perfectly substitutable for each other. This would create the paradoxical result of having to treat renewable energies in the same way as polluting energies, preventing the latter from being discriminated against in favour of the former, and consequently hindering the energy transition and thus the effort to fight climate change. Despite the GATT requires the parties to the agreement to fully comply with its provisions, some deviations from them can be justified on the basis of the general exceptions contained in Article XX GATT. These exceptions represent special and exceptional cases in which deviations can also be made from the basic principles of the Agreement. For this reason, and to avoid abuse by members, those who justify treaty violations on the basis of Article XX GATT in dispute must pass strict scrutiny, in particular, that posed by the chapeau of the article itself. Among the various exceptions that Article XX GATT poses, we find particularly relevant for the energy and renewables sector those explicitly stated in (b) and (g).

The Agreement on Subsidies and Countervailing Measures (ASCM) is at the core of the WTO rule on subsidies. The agreement expands and regulates the matter by elaborating on Articles VI and XVI GATT. When it comes to energy, subsidies play a key role. Indeed, given their strategic role, governments support their energy sectors with a wide variety of measures, of which subsidies are among the most common. Regardless of whether it is based on fossil fuels or renewables, the energy sector is one of the most subsidised sectors in the world. The SCM Agreement divides subsidies into three main categories: prohibited, actionable,

and non-actionable. Intuitively, prohibited subsidies are never permitted, as posited by Article 3 ASCM. Contracting parties may not maintain export subsidies and local content requirements and may not indirectly harm other members through the use of subsidies. Actionable subsidies are normally permitted unless the complaining party proves that they have negative effects on it. These dispositions provide a strong foothold to challenge measures to support renewable energy, leaving them particularly vulnerable. The dispositions on non-actionable subsidies were a kind of exception, making measures to support research activities, the development of disadvantaged areas, or adaptation to new environmental standards admissible. These provisions could have played a key role in encouraging measures to promote renewable energy, but the provisions concerning non-actionable subsidies expired in 1999 after the members failed to agree on their extension. At present, therefore, there are no exceptions to the discipline of the SCM Agreement.

The Agreement on Trade-Related Investment Measures (TRIMs) is also relevant to the promotion of sustainable energy. The agreement applies to investment measures to trade in goods only and provides for the application of National Treatment clauses and the prohibition of quantitative restrictions to them. The TRIMs Agreement applies to the energy industry when it comes to cross-border energy investments or energy production. Thus, even if they did not qualify as subsidies, any investments aimed at promoting the development of renewables through local content requirements or other discriminatory measures would find an additional obstacle in TRIMs and would therefore be inadmissible.

Finally, The GATS regulates international trade in services and its provisions relate only to them. Again, the principle of non-discrimination is at the core of the Agreement. Article II of the GATS regulates the Most Favoured Nation treatment. Under this disposal, if a country allows foreign suppliers in a sector, service providers from all other WTO Members should be provided with equal opportunity in that area. Indeed, Article XVII GATS regulates the National Treatment, for which each Member shall accord to services and service suppliers of any other Member, treatment no less favourable than that it accords to its own like services and service suppliers. In this matter, Article XVI GATS regulates market access by guaranteeing it to all other members. However, what these two articles have in common is that unlike in the GATT, granting market access and National Treatment is not a given. Members are only obliged if they have committed to do so in their respective schedules. Indeed, the parties of the Agreement make sector specific commitments in their GATS schedules of specific commitments.

3. Renewable Energy Disputes and the WTO Cases

The *Canada - Renewable Energy/FIT* and *India – Solar Cells* disputes are front-runners and involve the relationship between the WTO and renewable energy, which have kept the DSU mechanism under criticisms over the past decade. First of all, it is important to make it clear that such disputes should not be seen as an attempt by states to strike a balance between the need to advance measures to support the energy transition

and the need to do so without measures that are excessively detrimental to free trade. Rather, the trade disputes over renewable energy support measures are *do ut des* disputes between a few advanced economies with fast-growing and competing clean energy industries.

In the *Canada - Renewable Energy/FIT* dispute there are measures taken by the Canadian province of Ontario to promote renewable energy consumption since 2009. Canada, through the Ontario Power Authority, was financing producers of solar photovoltaic and wind power energy through guaranteed rates for electricity, at rates set above those accorded to conventional producers of power. In practice, energy producers were compensated for the higher costs of producing clean energy through the granting of a fixed price for each unit produced. These types of measures, in their different declinations, are generally known as feed-in tariffs (FITs) and are intended to incentivise the production or consumption of a given good or service, in this case, renewable energy. Japan and the European Union challenged these measures, bringing the issue of renewable energy into the WTO forum for the first time. By the complainant states, the Canadian FITs were considered to be non-compliant with the WTO standard, as they would be a violation of the National Treatment obligation under Article III GATT, Article 2 TRIMs Agreement, which excludes the admissibility of TRIMs inconsistent with Article III GATT, and Articles 1 and 3 SCM Agreement, which prohibits import substitution subsidies. In other words, the Canadian incentive scheme was seen as highly discriminatory, as it not only represented a prohibited subsidy, according to the classification made by the SCM Agreement but, through the inclusion of local content requirements ensured better treatment for locally produced goods, thereby discriminating against foreign products.

India - Solar Cells dispute concerns another renewable energy support measure, namely India's Jawaharlal Nehru national support programme for solar cells and modules. The Indian government pledged to purchase energy with incentive tariffs from manufacturers that were required to use locally produced cells and modules. The measure thus incorporated a local content requirement. The FIT programme was quite similar to the one challenged only shortly before in the *Canada - Renewable Energy/FIT* dispute. In fact, it too was challenged, this time by the United States, on the basis of Article III GATT, 3 TRIMs and the SCM Agreement.

Both the measures in question were declared non-compliant with WTO rules, given their discriminatory content.

The crucially important point that emerges from the analysis of the disputes in question is that the policy space left to non-specifically trade-related objectives, such as the incentivisation of renewables, depends largely on the interpretation that the DSU decides to give to the rules in question. Indeed, if there are no provisions that clearly refer to the terms in dispute, as is the case with energy in WTO agreements, it is up to the Panel, and the Appellate Body then, to recognise and draw the links that may bring a given measure within the sphere of implementation of a specific norm. This consideration logically brings two fundamentally important issues into our reasoning, one concerning the effective operation of the Dispute Settlement

Mechanism and the other pertaining to the need to ensure legal certainty if renewable energies are to truly advance.

As far as legal certainty is concerned, it is a fundamental and universally recognised concept that underpins legal systems, whether they are national, international or supranational. When it comes to climate change, it requires a swift and decisive response that can only be ensured if there is clarity and certainty around the international legal framework in which some of the most popular measures needed to accelerate the energy transition fall. However, from the scenario outlined so far, the treatment of renewable energy incentive measures certainly lacks clarity and certainty, starting with the basic questions concerning energy.

Moreover, within the WTO system, the dispute settlement system is the key element providing security and predictability to the rule-oriented multilateral trading system. This assertion, however, may only become true if the Panel and Appellate Body interpret and apply the law predictably when making decisions regarding complaints brought forth by WTO members. The degree of legal clarity and predictability that can be achieved in the findings of the Panel and the Appellate Body will determine the security and predictability of the trading system, and through it, the market, and its various operators. However, the rules relevant to renewable energy measures were not designed with the regulation of this sector in mind, they only turned out to be relevant because they were invoked in disputes concerning them. This implies that when the mechanism is called upon to deliberate on such provisions, it does not have to draft and interpret on the basis of rules with a clear purpose and content. Rather, it enjoys greater freedom. Precisely this freedom of interpretation represents both an opportunity and a threat. If it leaves the Panel and the Appellate Body sufficient room to interpret the provisions in favour of incentivising renewables, not without requiring a considerable interpretative effort that is very often cumbersome and not always completely justifiable, at the same time it makes contrary interpretations much easier. In other words, in the way these rules are designed, it is much easier to arrive at interpretations that are contrary to the incentivisation of renewables, while favourable interpretations sometimes require real legal acrobatics. It is precisely through such legal acrobatics that Panel and Appellate have unsuccessfully attempted to gain more policy space for the pursuit of non-trade-related objectives such as climate change mitigation.

In conclusion, it is evident how the WTO system is gradually opening up to the incorporation of non-trade-related policy objectives such as environmental protection. This is evidenced by the attempts to achieve greater regulation of the sector in the Doha Development Agenda and the Ninth Ministerial Conference of the WTO in Bali, as well as the negotiations to adopt the Environmental Goods Agreement and the openings of the Dispute Settlement Mechanism. However, the climate crisis requires a swift and effective response, and certainly cannot wait the long time it would take to negotiate a new agreement on the issue. The WTO needs to tackle this issue head-on because in doing so it could regain the leading role on the international stage that is increasingly being challenged by the proliferation of regional and preferential trade agreements.

4. The Role of WTO and Possible Reforms

The most critical points in the governance of renewable energy incentive measures within the WTO framework are the general legal uncertainty surrounding the fate of such measures, and the lack of norms guaranteeing a secure policy space for non-trade related objectives such as environmental protection. In particular, the provisions that most create and reflect these problems in the entire WTO system are to be found in the SCM Agreement.

A first reform option to be considered, and perhaps the most plausible in terms of feasibility, is to extend the application of the exceptions contained in Article XX GATT to the SCM Agreement as well. The doctrine has long debated this possible extension, finding support from numerous scholars. In particular, it has been argued that the GATT has, with respect to the so-called operational agreements, a general character, and therefore should apply to every matter not expressly regulated.

Another possible reform to be considered concerns the possibility of reviving the former Article 8 SCM Agreement. Although the rationale behind some exceptions such as that contained in paragraph 8:2, namely, to facilitate society's transition to a more sustainable future, is of paramount importance and to be taken into account in future WTO reforms, its resurrection may not guarantee the desired effects. As a matter of fact, in its entirety Article 8 was not designed keeping the protection of the environment as the main objective. This means that bringing it back into its original form would significantly restrict the scope of non-approved subsidies and would not be particularly useful for WTO members to introduce national measures to support their industry of renewable energy, mainly because of the limited scope, the strict eligibility criteria and the onerous procedures that characterize the article.

The last reform proposal advanced with regard to the SCM Agreement, and perhaps the most desirable, is to design and implement a new exception or exemption clause that is significantly broader than those contained in Article XX GATT and Article 8 SCM Agreement.

Finally, moving slightly away from the SCM Agreement, the best option to fill the policy space in renewable energy governance is to negotiate a new sectoral agreement precisely on measures to support renewable energy, or better, an energy framework agreement.

The bottom line is that, although the different solutions analysed so far differ in their feasibility and the degree of protection they would offer to renewable energy incentive measures, they are based on the political will and determination on the part of WTO Members and the international community. Therefore, the real fundamental condition that needs to occur for such reforms to become feasible is a change of mindset in the way members negotiate within the WTO. As Dr Elena Cima notes in the interview, the mentality that characterises the approach to policy objectives and negotiations within the WTO is still closely linked to the prevalence of free competition concerns at the expense of considerations such as environmental or social ones. Moreover, historically, negotiations within the WTO are a complex process of compromises and

concessions, in which individual states often play as individual actors aiming solely at maximising their own utility. Again, when it has been necessary to put up a united front on issues of particular importance, they have divided on the basis of their status as developed or developing countries. Hence, the logical conclusion of a necessary change of mentality. When it comes to negotiating on issues such as global common goods, such as a healthy environment, clean air and climate change mitigation, excessively utilitarian calculations cannot be allowed and it is necessary to listen to the demands of all countries, starting with the least developing countries, which also represent the majority of the WTO membership.

Instead, adopting a perspective from the point of view of individual states, it can be reasonably argued that the quickest way to overcome such incompatibilities would be for states to design 'WTO-proof' incentive measures, i.e., provisions that avoid as much as possible blatantly discriminatory content such as the LCR. While the measures considered above would provide an optimal solution in terms of legal certainty, they are flawed from the point of view of timing. Instead, individual states could design WTO-compliant measures from the outset, providing a much more agile and rapid solution, perhaps even while waiting for a more structured reform.

In this, a possible solution, as suggested by Professor Taraborrelli, that would allow states to invest by incentivising renewable energy, is to proceed with tenders for the supply of energy produced from renewable sources. With this procedure, a large investment tied to the supply of energy produced from renewable sources would be injected into the market, which would, among other things, have the effect of stimulating production and consequently expanding the share of renewable energy in the national energy mix. In addition, the tender would be awarded, in full respect of free competition and without particularly distorting measures, to the supplier offering the lowest price, which the state undertakes to pay, and consequently assuming the risk of the transaction.

To conclude, the WTO should play a prominent role in advancing renewable energies, but while waiting for a change in the Organisation, which is slowly but surely taking place, the role that individual states can play through their national policies in order to implement measures aimed at climate change mitigation without running into incompatibility with the WTO system remains fundamental and of primary importance.

5. Conclusions

To assert that the current WTO governance is hindering the adoption of measures to incentivise renewable energy is a far-fetched assumption at best, rather it is argued that it is not doing enough to facilitate the creation of the policy space necessary for the implementation of measures to correct the greatest market failure of our time, namely climate change. As a matter of fact, it emerged that there are very few challenged measures within the WTO compared to those implemented by member states that have not been the basis of disputes. In the disputes analysed, it emerges that it is not so much the environmental rationale that conflicts with the

law of the Organisation, but the economic rationale, frequently expressed in the form of LCR clauses, whose positive effects in the short term and negative effects in the long term would need to be taken into account from time to time in the DSM assessments.

However, this finding, as relevant as it may be in the debate in the doctrine that has looked very carefully at the compatibility of renewable energy incentive schemes with the WTO system, does not make it any less necessary for the Organisation to embrace and make itself permeable to such instances. Indeed, the indissoluble link between climate change and international trade has already been amply emphasised, and how much the latter can still exacerbate it, but above all how it can also be a formidable tool for combating it. It is precisely the WTO, which in fact is the maximum tangible expression of free trade, that should set itself up as a pioneer of a paradigm shift, increasingly open and attentive to environmental and social issues, which in an increasingly interconnected world full of new challenges, will play an increasingly important role in the future. Showing a new footprint to the international community and recovering that central role that has been slowly eroded by the push towards localism to the detriment of the multilateral system.

In this regard, the need for action on two tracks, running in parallel towards the same goal, has been affirmed, both at the level of individual states and at the multilateral level. On the one hand, individual states, when designing incentive measures, should limit their discriminatory content as much as possible. Alternative solutions are possible and feasible, such as using tenders that can incentivise and promote the adoption of an increasing share of renewable energy within a state's energy mix without distorting free competition. On the other hand, a change of mindset is needed in the way WTO negotiations are conducted. Possible solutions are wide-ranging and address the problem with varying degrees of efficiency and feasibility. However, they require a strong and decisive political will to actually be implemented. An ad hoc agreement that could deal with environmental issues in their entirety would be the optimal solution, however, it does not seem feasible for the time being if environmental concerns do not prevail over purely economic ones.

In the recent period, something seems to be changing in the Geneva Organisation, it is showing itself to be more and more attentive and present towards these issues, as the historic result of the Fisheries Subsidies Agreement demonstrates. It only remains a suggestion that this process does not come to a halt and can become the new negotiating paradigm within the WTO.