energies

MDPI

Article

Trade, Climate and Energy: A New Study on Climate Action through Free Trade Agreements

Christopher M. Dent

Business School, Edge Hill University, Ormskirk L39 4QP, UK; dentc@edgehill.ac.uk

Abstract: Efforts to tackle climate change are taking place on multiple fronts. This includes trade, an increasingly important defining feature of the global economy. In recent years, free trade agreements (FTAs) have become the primary mechanism of trade policy and diplomacy. This study examines the development of climate action measures in FTAs and discusses what difference they can make to tackling climate change. Its primary source research is based on an in-depth examination of FTAs in force up to 2020. This paper is structured around a number of research questions forming around three main inter-related areas of enquiry. Firstly, to what extent are these provisions in FTAs essentially derivative of energy's connections with climate change, and thus part of a wider trade–climate–energy nexus? Secondly, what kinds of climate action are FTAs specifically promoting, and how effective a potential positive impact may we expect these to have? Thirdly, are certain climate action norms being promoted by trade partners in FTAs and if so, then who are the norm leaders, what is motivating them, and to what extent are they extending their influence over other trade partners? In addressing these questions, this study offers new insights and analysis regarding a potentially important emerging trend in the trade–climate–energy nexus. Its international political economy approach and latest empirical research also provide a further distinctive contribution to knowledge in this inter-disciplinary area, developing new comprehensions of the relationship between trade, climate action and energy.

Keywords: trade; climate action; clean energy; free trade agreements; energy trade policy

Citation: Dent, C.M. Trade, Climate and Energy: A New Study on Climate Action through Free Trade Agreements. *Energies* **2021**, *14*, 4363. https://doi.org/10.3390/en14144363

Academic Editor: Vincenzo Bianco

Received: 3 June 2021
Accepted: 12 July 2021
Published: 20 July 2021

1. Introduction

Efforts to tackle climate change are now taking place on multiple fronts, including trade. The connections between climate action and trade are becoming more significant in a globalising world economy and system. Trade is a core defining feature of contemporary globalisation and has created growing functional linkages between economic activities across the planet through cross-border supply chains, production networks and other transnational economic developments. Trade's share of global GDP has steadily risen from 30 percent in the 1970s, just over 40 percent in the 1990s to approximately 60 percent by the start of the 2020s [1]. Meanwhile, free trade agreements (FTAs) have emerged as the primary mechanism of trade policy and diplomacy, with significant consequences for how international trade is governed. For these reasons, climate action measures included in FTAs have great potential significance, and inherently close links exist here with energy policy as this study discusses.

Climate-relevant provisions within free trade agreements first began to appear in the early 1980s. It was some considerable time, though, before really substantive measures were included and a critical mass of trade partners engaged. From 2010, there was a significant step change in activity, and this has further intensified in more recent years. For a growing number of countries, FTAs have become another means through which climate action goals can be achieved, also presenting opportunities for trade and energy policy to work more closely together in new ways. This study examines the development of climate action measures in FTAs and discusses what difference they can make to tackling

climate change. Its primary source research is based on an in-depth examination of FTAs in force [2] that contain climate-relevant provisions. This study is structured around a number of research questions forming around three main inter-related areas of enquiry. Firstly, to what extent are these provisions in FTAs essentially derivative of energy's connections with climate change, and thus part of a wider trade–climate–energy nexus? Secondly, what kinds of climate action are FTAs specifically promoting, and how effective a potential positive impact may we expect these to have? Thirdly, are certain climate action norms being promoted by trade partners in FTAs and if so, then who are the norm leaders, what is motivating them, and to what extent are they extending their influence over other trade partners?

In addressing these questions, this study offers new insights and analysis regarding a potentially important emerging trend in the trade–climate–energy nexus. Its international political economy approach and latest empirical research also provide a further distinctive contribution to knowledge in this inter-disciplinary area, developing new comprehensions of the relationship between trade, climate action and energy. This study begins by addressing the first area of enquiry regarding the interconnections between these three elements. After a section on its research methodologies, this study then moves to the second (what kinds of climate action) and third (norms analysis) areas of enquiry before concluding with its main arguments.

2. Trade, Climate Action and Energy

2.1. Core Discussion

Trade has been generally viewed in pure economic terms as having net positive impacts on *human welfare and prosperity* through improvements in resource efficiencies, consumer choice, innovation and other benefits. However, trade's relationship with the environment is more complex. While trade can lead to more efficient use of natural resources, raise income levels to thresholds where public support for environmental goals strengthens, enable producers of environmental goods and services to expand and subsequently disperse green technologies worldwide [3–6], it can also have negative environmental impacts and exacerbate climate change. Trade-induced expansion of human economic activity can consequently increase carbon and other greenhouse gas (GHG) emissions, accelerate the depletion of natural resources, threaten eco-systems and drive down environmental standards in the pursuit of international competitiveness [7–10]. Trade's net balance effects on the environment will depend on the *scale* of trade-induced economic growth, the *composition* of this trade and how trade-related improvements in *technology* can reduce emission levels [11,12]. This is highly relevant to FTAs given their growing importance in promoting, regulating and governing trade flows, and role they can play in tackling climate change.

Energy is furthermore a fundamental element in the trade–climate relationship in both causal and consequential senses. Trade-induced economic growth that has significant ecological impacts will in most cases lead to, and depend on, higher inputs of energy. Likewise, trade-related changes in emission levels are derivatively linked to energy utilisation in some form, whether regarding from the transportation of objects and materials around the planet, export-oriented production, or other relevant activity. More broadly, trade's expanding share of the global economy has led to a de facto greater responsibility for fossil fuel energy emissions globally, the primary cause of anthropogenic climate change accounting for approximately three-quarters of all GHGs [13]. For these and other reasons discussed below, energy is significantly intrinsic to connections between trade and climate action, as revealed in the first studies on this subject emerging in the early 1990s. Most were initially focused on border carbon taxes and carbon leakage issues [14–18]. The literature has since ebbed and flowed, with works typically being either policy or technical/science oriented in focus. These have coalesced to around six inter-related *empirical domains* where energy is a derivative theme or element:

- *Carbon-related measures*: these have taken many forms. Carbon tariffs typically target emissions arising from internationally transported goods, while carbon trading and

market measures are usually based on emissions permit systems. Carbon sinks primarily concern the emission mitigation services provided by forests and forestry plantations, and often linked to carbon trading offset arrangements [19–26].

- *Clean energy sector development*: trade, energy and often industrial policy measures focused on developing the productive (and hence trading) capacity of various decarbonising, zero- or low-emission technologies such as renewable energy and energy efficiency, these also being core climate-relevant products targeted for trade promotion and liberalisation [27–30] as noted below.
- *Promotion and liberalisation of trade in climate-relevant products*: with the aim of directly expanding trade in goods and services that address climate change, including the removal of barriers such as import duties [31–35]. This domain is hence closely linked with the above domain and can extend to trade-related foreign direct investment (FDI) issues also.
- *Environmental and technical standards*: that facilitate rather than hinder trade in climate-relevant products, such as common or mutually compatible standards implemented by trade partners or agreeing to comply with each other's standards where these differ [36–38]. Emission standards relating to the energy used in internationally traded vehicles are a common example.
- *Trade Transportation*: mainly concerning emissions generated from cross-border movements of traded products by fossil fuel energy used in shipping, aviation, road and rail [8,39–43].
- *Trade and climate governance regimes, and their interaction*: as climate change is essentially viewed as a global-level issue and trade has become increasingly globalised, this domain has centred on the respective roles of the World Trade Organisation (WTO) and World United Nations Framework Convention on Climate Change (UNFCCC), which along with other international institutions such as the International Energy Agency (IEA) began to address trade-climate issues from the early 1990s [32,44–47].

From the above, it is clear that energy is integral to all six empirical domains, these in turn providing an important frame for this study's analysis and discussion. Key issues relating to energy trade should too be considered. In terms of physical flows and volumes, fossil fuel commodities (oil, coal, gas) have hitherto accounted for the vast majority of energy trade [48]. Yet, governance of this trade remains extremely patchy [27,49–51]. The WTO has no specific rules on energy, it being covered instead by generically applied trade disciplines, the most relevant being its Article XI regulations on the prohibited use of export restrictions. National governments have generally eschewed multilateral trade agreements in this area due to the strategic imperatives of securing their country's supply lines of foreign imported energy, normally achieved through bilateral contracts with supplier countries [52,53]. Explicit energy security provisions in FTAs themselves focused on trade in fossil fuels have remained very rare. Among these examples are Japan's free trade agreements with most oil-producing members of the Association of Southeast Asian Nations (ASEAN)—Brunei (2007), Indonesia (2007), and Vietnam (2009)—that mainly forbade the imposition of energy trade restrictions. Some regional agreements have meanwhile included measures on cross-border electricity trade (e.g., ASEAN Power Grid initiative) and oil/gas pipeline transit arrangements (e.g., Energy Charter Treaty).

Both the climate action agenda and fast expansion of FTAs over recent years have, though, provided an opportunity for trade partners to innovate with new forms of energy trade policy, centred in particular on the clean energy sector. This has also correspondingly led to increased attention on (clean) energy *technology* trade, thus moving beyond the past almost singular preoccupation with energy *commodity* trade. These important new developments in energy trade policy and diplomacy are closely linked to the rise of climate-relevant provisions in FTAs. Moreover, the inclusion of clean energy trade co-operation measures in these agreements—a key feature of these provisions—potentially helps establish greater stability and order in a sector where numerous trade conflicts between countries have arisen in recent years [30,54].

Free trade agreements have also become increasingly important to the trade–climate–energy nexus for other key reasons. First, the WTO and global trade multilateralism have seriously weakened over the last two or so decades, while FTAs have become ever more prominent. In 1990, only 22 fully operational FTAs were in force: by 2020, there were 305, mostly bilateral in nature. Many are comprehensive in scope and depth, and their smaller-scale and diverse nature enables them to offer more nimble, flexible and bottom-up options for trade policy innovation compared to the global trade deal (i.e., the Doha Round) the WTO has abjectly failed to conclude since the early 2000s [55–57]. Every FTA creates its own laws, regulations and other provisions that shape trade flows and other economic-related actions between its signatory parties. Aggregated together, FTAs nominally cover approximately two-thirds of current world trade [2]. The transnationalisation of trade activity through the foreign direct investments of multinational enterprises has also deepened the regulatory reach of FTAs into national economies. At policy and wider governance levels, trade has been issue linked with various social and environmental challenges, providing options for FTA engagement with the climate agenda.

The second general reason is that FTAs have stepped into the trade-climate governance vacuum created by an inert WTO and UNFCCC in this area. Just as the WTO has no specific rules in energy, it also still has no trade disciplines specifically on climate change or action either [27]. Given the strengthening connections between trade and climate change, Cottier and Payosova [58] argue that this represents a significant failure of global governance by the WTO. Meanwhile, the UNFCCC remains surprisingly mute on trade with the exception of a few short references in its Protocols and other documents [57,59,60]. Interaction between the WTO trade regime and the UNFCCC climate regime has been largely confined to information-sharing dialogues [14,61–64]. Other UN agencies and key international organisations (e.g., International Energy Agency, G20, World Bank) have engaged with trade-climate issues but largely limited to analytical reports, most published over a decade ago [6,65–68]. Free trade agreements have meanwhile established new elements and structures of trade–climate–energy policy interaction.

2.2. Assessing the Impact of FTAs

FTAs have grown in importance, so the literature has expanded to assess their impact on trade, economies and various related issues, including climate action. According to Breinlich [69], while they can incur short-run adjustment costs, FTAs tend to deliver more significant longer-term trade and other economic benefits. Hannan [70] argued that impact assessments of FTAs have tended to underestimate their trade creation effects. Yet, the highly diverse nature of these agreements nevertheless makes it difficult to make global-level evaluations on how effective these agreements have proved generally on creating trade and delivering positive welfare outcomes. As Baier et al. [71] contend in their survey of FTA studies over the last 20 years, their impacts will depend on key factors that can vary significantly, including trade gravity relationships, scope and depth of an agreement's provisions, factor endowment differences, and political frictions to trade. Consequently, the vast majority of FTA impact studies tend to focus on very specific issues or specific sub-sets of trade partners.

Trade gravity models have become, though, a standard framework for investigating the impact of FTAs on trade costs and flows in particular between signatory countries [72,73]. These apply the principle of gravitational forces from physics to explain trade dynamics in the world economy. Thus, trade gravitational forces are strongest between geographically closer national economies; and the larger a national economy's market, the greater its trade gravitational pull on others. By way of example, Ramaswamy et al. [74] found from their research on Asia's FTAs that the higher transportation costs involved of trading goods over significant geographic distances in the region are not always adequately offset by transaction cost reductions arising from FTAs, especially when distant and relatively small market trade partners are involved. Thus, geography and markets matter in determining an FTA's impact. In other recent research, Yao et al., 2021 [75], concur with the view that

FTAs have generally positive trade creation effects but this will be significantly determined by trade gravity factors. They also argued FTAs that especially liberalise and promote trade in intermediate goods (e.g., parts and components) and contain less restrictive rules of origin are particularly effective as they are more aligned to international supply chain arrangements, this accounting for a growing share of global trade. This is particularly relevant to multi-component clean energy goods as we later discuss.

Another key issue to note is that non-tariff measures (NTMs) have become more important than tariff liberalisation in a growing number of FTAs—especially more advanced ones—and this has implications for assessing the impact of these agreements [76]. The scope of NTMs is broad, covering the removal of commercial policy barriers (e.g., competition policy) that impede trade and investment flows between FTA partners, to trade-related co-operation measures (e.g., on clean energy) to various regulatory compliance measures (e.g., on emission standards). Compared to tariff liberalisation, NTMs can involve longer implementation processes and thus longer time to exert their impacts. These also are frequently more qualitative in nature and therefore more difficult to accurately quantify [77,78]. This issue is relevant when later discussing the impact of climate co-operation in FTAs.

2.3. Previous Studies on Climate Action through FTAs

Although, as mentioned previously, scholarly interest in the trade–climate relationship began to emerge in the 1990s, it was not until the early 2010s that works specifically on climate measures or provisions in FTAs were first published [31,32,55]. By the middle of the decade, this became particularly focused on 'mega-regional' FTA projects, namely the Transatlantic Trade and Investment Partnership (TTIP—EU and US), the Trans-Pacific Partnership (TPP—US and Japan) and the Regional Comprehensive Economic Partnership (RCEP—China and Japan). Each possessed enormous potential for trade-climate regime advancement and innovation, albeit there too being scope for trade regulatory competitive tension between them [37,79–81]. As it transpired, the TTIP project faltered and both the TPP (reformulated into the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP) after President Donald Trump pulled the US out of the TPP) and the RCEP contain relatively limited climate-relevant provisions.

Global-level research published in the collaborative works of Morin et al. [34,82] Morin and Jinnah [56] and Jinnah and Morin [83] have offered arguably the most important studies on climate action related measures in FTAs thus far. These are all derived from research data compiled in the Trade and Environment (TREND) database that comprises 308 environmental provision types outlined in a detailed codebook. Three key features of the TREND database should be kept in mind: (i) its dataset runs *up to 2016*; (ii) it contains *environmental* provisions generally; (iii) it examines *all types of trade agreement* (688 in number), well over half of these being weaker, sub-FTA (e.g., partial scope) agreements with many also now defunct. In separate and more specific works, both Morin et al. [82] and Morin and Jinnah [56] identified eight provision types from the TREND codebook they considered were directly climate relevant. This research conducted some years ago revealed many useful insights. This study's research provides fresh insights and perspectives based around its key research questions and presents new findings and arguments on climate action through FTAs.

3. Methodology

This study's primary source research is based on an in-depth examination of the official treaty texts of free trade agreements. This involved a comprehensive scrutiny of the complete documented texts of all the 305 in-force FTAs notified at the WTO by the end of 2020. Almost all FTAs are organised into chapter sections, each comprising a number of 'articles' which themselves consist of specific provisions (or measures) entailing particular rules or actions that require signatory parties to comply with or commit to. Annexes, side letters and other appendages may too be incorporated into these agreements and contain

additional provisions. This study used a template analysis methodological approach to scrutinise these documented FTA texts, generating research findings and results. Template analysis involves structuring and organising the evaluation of text data through the creation of hierarchical tier nodes that form 'templates' for analysis [84–86]. In the first methodological phase, key word searches (including 'carbon', 'climate', 'energy', 'emissions', 'environmental', 'clean', 'green', 'ecological', 'renewable', 'GHG', and 'UNFCCC') derived from relevant terms of reference from the six trade-climate empirical domains were conducted across all agreements to establish which FTA provisions were qualifiable as climate relevant, this meaning designed to contribute positively to climate change mitigation or adaptation outcomes.

These provisions were then classified into different provision types utilising an adapted form of the aforementioned TREND codebook structure. In this sense, this study drew upon an existing coded template but significantly extended and further developed it. Whereas previous research identified eight TREND-based provision types as directly climate relevant, this study argues that 14 climate-relevant provision types can be classified, as detailed in Table 1. These formed the *first-tier nodes* of this study's coding template in the initial stage of thematically analysing the text content of FTA documents. The eligibility of four provision 'nodes' (types 1, 2, 3 and 11) is based on the earlier discussed reasoning that energy and its related carbon and other GHG emissions are the principal cause of climate change. The TREND codebook itself combines energy with climate change under its heading structure (Section 10.15), and half of this study's 14 provision types (4 to 10) come under this specific heading category. Table 1 also maps the trade-climate empirical domains against each of the provision types, helping further establish energy's connections with them. Provision types 1, 2 and 3 have been adapted from the TREND codebook to become more climate action focused from their original generic environmental phrasing. Type 3 ('promotion') also includes trade and/or FDI liberalisation by inference. Type 10 ('other climate norms') is a residual provisional type that rarely arises in FTAs but is nevertheless relevant. The TREND codebook did not include the UNFCCC 2015 Paris Climate Agreement but has been added here (type 14). Table 2 details the pattern of the 14 climate-relevant provisions across the 69 FTAs found to possess at least one such provision.

Table 1. Climate-Relevant Provision Types in FTAs.

No.	Provision Type	Original TREND Designation (and Codebook Number/s)	Empirical Domains	First FTA to Include
1	Generalised only climate-relevant interactions between energy policies and the environment	Interaction between energy policies and the environment (4.03)	Clean energy sector development	US–Chile (2003)
2	Carbon trading and market instruments	Specific economic or market instruments (6.03.01)	Carbon-related measures	EU–Korea (2010)
3	Promotion of trade and/or foreign investment in climate-relevant products	Promote environmental goods and services (7.01)	Promotion and liberalisation of trade in climate-relevant products; clean energy sector development	US–Central America–Dominican Republic (2004)
4	Promotion of renewable energy development	Same designation (10.15.01.01)	Clean energy sector development	Economic Community of Central African States (1983)
5	Promotion of energy efficiency technologies	Same designation (10.15.01.02)	Clean energy sector development	EU–Hungary (1991)
6	Reduction in GHG emissions	Same designation (10.15.02.01)	Trade transportation; Clean energy sector development	EU–South Africa (1999)

Table 1. *Cont.*

No.	Provision Type	Original TREND Designation (and Codebook Number/s)	Empirical Domains	First FTA to Include
7	Climate change adaptation	Same designation (10.15.02.02)	Multiple domains	China–Costa Rica (2010)
8	Co-operation on climate change	Same designation (10.15.02.03)	Multiple domains	EU–Hungary (1991)
9	Harmonization of legislations related to climate change	Same designation (10.15.02.04)	Trade and climate regimes, and their interaction	EU–Ukraine (2014)
10	Other norms on climate change	Same designation (10.15.02.05)	Multiple domains	Japan–Brunei (2007)
11	Environmental standards on vehicle emissions	Same designation (10.18)	Environmental and technical standards; clean energy sector development	European Economic Area (1992)
12	Ratification, implementation or references generally of UNFCCC accords	Same designation (14.01.10, 14.02.09.01, 14.04.10)	Trade and climate regimes, and their interaction	Common Market for Eastern and Southern Africa (1993)
13	Ratification, implementation, prevalence or references generally of Kyoto Protocol	Same designation (14.01.11, 14.02.10.01, 14.03.11, 14.04.11)	Trade and climate regimes, and their interaction	Japan–Mexico (2004)
14	Implementation or references generally of the Paris Climate	Same designation (14.02.20 14.04.26)	Trade and climate regimes, and their interaction	Chile–Argentina (2017)

Table 2. FTAs with Climate-Relevant Provisions.

No.	Free Trade Agreement	Year Sign	1. Generalised Only Climate-Relevant Interactions between Energy Policies and the Environment	2. Carbon Trading and Market Instruments	3. Promotion of Trade and/or FDI in Climate-Relevant Goods and Services	4. Promotion of Renewable Energy Development	5. Promotion of Energy Efficiency Technologies	6. Reduction in GHG Emissions	7. Climate Change Adaptation	8. Co-Operation on Climate Change	9. Harmonization of Legislations Related to Climate Change	10. Other Norms on Climate Change	11. Environmental Standards on Vehicle Emissions	12. Ratification, Implementation or References Generally of UNFCCC Accords	13. Ratification, Implementation, Prevalence or References Generally of Kyoto Protocol	14. Implementation or References Generally of the Paris Climate Agreement	Provisions TOTAL
1	Economic Community of Central African States (ECCAS)	1983	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2	African Economic Community (AEC)	1991	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3	EU–Hungary FTA	1991	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
4	EU–Poland FTA	1991	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
5	European Economic Area (EEA)–EU–EFTA	1992	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
6	North American Free Trade Agreement (NAFTA)	1992	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
7	EU–Bulgaria FTA	1993	0	0	0	1	1	0	0	1	0	0	0	0	0	0	3
8	EU–Romania FTA	1993	0	0	0	1	1	0	0	1	0	0	0	0	0	0	3
9	EU–Slovakia FTA	1993	0	0	0	1	1	0	0	1	0	0	0	0	0	0	3

Table 2. *Cont.*

No.	Free Trade Agreement	Year Sign	1. Generalised Only Climate-Relevant Interactions between Energy Policies and the Environment	2. Carbon Trading and Market Instruments	3. Promotion of Trade and/or FDI in Climate-Relevant Goods and Services	4. Promotion of Renewable Energy Development	5. Promotion of Energy Efficiency Technologies	6. Reduction in GHG Emissions	7. Climate Change Adaptation	8. Co-Operation on Climate Change	9. Harmonization of Legislations Related to Climate Change	10. Other Norms on Climate Change	11. Environmental Standards on Vehicle Emissions	12. Ratification, Implementation or References Generally of UNFCCC Accords	13. Ratification, Implementation, Prevalence or References Generally of Kyoto Protocol	14. Implementation or References Generally of the Paris Climate Agreement	Provisions TOTAL
10	Common Market for Eastern and Southern Africa (COMESA)	1993	0	0	0	1	0	0	0	1	0	0	0	1	0	0	3
11	Economic Community of West African States (ECOWAS)	1993	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
12	Economic and Monetary Community of Central Africa (CEMAC)	1994	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
13	EU–South Africa FTA	1999	0	0	0	1	1	1	0	0	0	0	0	0	0	0	3
14	East African Community (EAC)	1999	0	0	0	1	1	0	0	1	0	0	0	0	0	0	3
15	EU–Chile FTA	2002	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
16	US–Chile FTA	2003	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17	US–Central America–Dominican Republic FTA	2004	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
18	Japan–Mexico FTA	2004	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2
19	Taiwan–Guatemala FTA	2005	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
20	Taiwan–Nicaragua FTA	2006	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
21	Taiwan–El Salvador–Honduras FTA	2007	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
22	Japan–Brunei FTA	2007	1	0	0	1	1	1	0	0	0	1	0	0	0	0	5
23	Japan–Indonesia FTA	2007	1	0	0	1	1	0	0	0	0	0	0	0	0	0	3
24	US–Korea FTA	2007	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
25	US–Panama FTA	2007	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
26	Canada–Peru FTA	2008	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
27	EU–CARIFORUM EPA	2008	0	0	1	1	1	0	0	0	0	0	0	0	0	0	3
28	China–Singapore FTA	2008	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
29	Chile–Turkey FTA	2009	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
30	China–Peru FTA	2009	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2
31	India–Korea FTA	2009	0	0	0	1	1	0	0	0	0	0	1	0	0	0	3
32	Japan–Switzerland FTA	2009	0	0	1	1	0	1	0	0	0	1	0	0	0	0	4
33	Chile–Malaysia FTA	2010	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
34	China–Costa Rica FTA	2010	0	0	0	1	0	0	1	1	0	0	0	0	0	0	3
35	EU–Korea FTA	2010	0	1	1	1	1	1	0	1	0	0	1	1	1	0	9
36	Chile–Vietnam FTA	2011	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
37	EFTA–Hong Kong FTA	2011	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
38	EFTA–Montenegro FTA	2011	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
39	Korea–Peru FTA	2011	0	0	1	1	1	1	1	1	0	0	1	0	0	0	7
40	EU–Central America FTA (Association Agreement embedded)	2012	0	1	1	1	1	1	1	1	0	0	0	0	1	0	8
41	EU–Colombia–Peru FTA	2012	0	0	1	1	1	1	1	1	0	0	0	1	1	0	8

Table 2. *Cont.*

No.	Free Trade Agreement	Year Sign	1. Generalised Only Climate-Relevant Interactions between Energy Policies and the Environment	2. Carbon Trading and Market Instruments	3. Promotion of Trade and/or FDI in Climate-Relevant Goods and Services	4. Promotion of Renewable Energy Development	5. Promotion of Energy Efficiency Technologies	6. Reduction in GHG Emissions	7. Climate Change Adaptation	8. Co-Operation on Climate Change	9. Harmonization of Legislations Related to Climate Change	10. Other Norms on Climate Change	11. Environmental Standards on Vehicle Emissions	12. Ratification, Implementation or References Generally of UNFCCC Accords	13. Ratification, Implementation, Prevalence or References Generally of Kyoto Protocol	14. Implementation or References Generally of the Paris Climate Agreement	Provisions TOTAL
42	Korea–Turkey FTA	2012	0	1	1	1	1	1	0	1	0	0	0	1	1	0	8
43	Canada–Honduras FTA	2013	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2
44	Chile–Thailand FTA	2013	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
45	Korea–Colombia FTA	2013	0	0	0	1	0	0	0	1	0	0	1	0	0	0	3
46	Colombia–Panama FTA	2013	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
47	New Zealand–Taiwan FTA	2013	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
48	EFTA–Bosnia and Herzogovina FTA	2013	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
49	EFTA–Central America FTA	2013	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2
50	EU–Ukraine FTA	2014	0	0	1	1	1	1	1	1	1	1	0	1	1	0	10
51	EU–Moldova FTA	2014	0	1	1	1	1	1	1	1	1	0	0	1	1	0	10
52	EU–Georgia FTA	2014	0	1	1	1	1	1	1	1	1	1	0	1	1	0	11
53	China–Korea FTA	2014	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
54	Australia–Korea FTA	2014	0	0	1	1	1	1	1	1	0	1	1	0	0	0	8
55	Malaysia–Turkey FTA	2014	0	0	0	1	1	0	0	1	0	0	0	0	0	0	3
56	Korea–New Zealand FTA	2015	0	1	1	1	1	1	1	1	0	1	0	0	0	0	8
57	EFTA–Philippines FTA	2016	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2
58	EU–East Africa Community (EAC) EPA	2016	0	0	0	1	1	0	1	1	0	0	0	0	0	0	4
59	EFTA–Georgia FTA	2016	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2
60	Chile–Argentina FTA	2017	0	0	0	1	1	1	1	1	0	0	0	1	0	1	7
61	EU–Canada FTA (CETA)	2017	0	1	1	1	1	1	1	1	0	0	0	0	0	0	7
62	EU–Armenia FTA	2018	0	1	1	1	1	1	1	1	1	1	0	1	1	1	12
63	US–Mexico–Canada Agreement (USMCA)	2018	0	0	1	1	1	1	0	0	0	0	0	0	0	0	4
64	Comprehensive and Progressive Trans-Pacific Partnership (CPTPP)	2018	0	0	0	1	1	1	0	0	0	0	1	0	0	0	4
65	EU–Japan FTA	2018	0	0	1	1	1	1	1	1	0	1	0	1	0	1	9
66	EU–Singapore FTA	2018	0	0	1	1	1	1	0	1	0	0	0	1	1	1	8
67	Australia–Peru FTA	2018	0	0	0	0	0	1	0	1	0	0	0	1	0	0	3
68	EU–Vietnam FTA	2019	0	1	1	1	1	1	1	0	0	0	0	1	1	1	9
69	Chile–Indonesia FTA	2020	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	TOTAL		**3**	**9**	**30**	**41**	**36**	**27**	**16**	**33**	**4**	**8**	**9**	**13**	**11**	**5**	**245**

Separate files for each agreement were then created and the text of all climate-relevant provisions inputted electronically into these from which this study's text database was created. The next stage of the template analysis process involved establishing *second-tier* and *third-tier nodes* from a deeper level scrutiny of the text using software-based word coding techniques. This primarily involved examining the qualitative similarities and

differences in the text within and across provision type categories (i.e., first-tier nodes) found in relevant FTAs, identifying further emerging sub-themes and connections based on revealed evident patterns and correlations from interrogation of the FTA text database. This also included determining the functional, operational and other attributes of the provisions to ascertain their main purpose and intended outcomes.

4. What Kinds of Climate Action through FTAs, and What Likely Impacts?

4.1. What Kinds of Climate Action Are FTAs Specifically Promoting?

We turn now to this study's second set of questions concerning what kinds of climate action are FTAs specifically promoting, and how effective a potential positive impact may we expect these to have. The 14 provision types provide a first-tier node classification framework for examining what kinds of climate action measures FTAs have incorporated into their texts. Table 2 shows the general patterns of occurrence for each provision type, where it is clearly apparent the most important empirical domain of activity is *clean energy sector development*. Of the 245 provisions from across all 69 total FTAs in this study, 146 or 60% fell into this category (types 1, 3, 4, 5, 6 and 11). The promotion of *renewable energy* and *energy efficiency* accounted for over half of these (77 provisions, 31% of the total) and played an early pivotal role during the 1980s and 1990s FTAs though from quite different perspectives.

In most of the African regional FTAs of this period (see Table 2), the promotion of renewable energy was set in an explicit *energy security* rather than an environmental context. For example, both the 1983 Economic Community of Central African States (ECCAS) and the 1991 African Economic Community (AEC) agreements state in mirrored provisions that its members will "Promote the development of new and renewable energy in the framework of the policy of diversification of sources of energy" (Article 54.2c of both agreements), and moreover were in both FTAs preceded in their own parallel commitment to "Establish appropriate co-operation mechanisms with a view to ensuring a regular supply of hydrocarbons" (Article 54.2b of both agreements), thus simultaneously promoting fossil fuel sector development for apparently similar motives and thus leading to particular 'green paradox' outcomes [10]. The 1993 Common Market for Eastern and Southern Africa (COMESA), 1993 Economic Community of West African States (ECOWAS) and 1999 East African Community (EAC) agreements also contained similar energy security focused measures on renewables, hence being of tangential climate relevance at best. This *second-tier node* 'energy security' classification of climate-relevant provisions does not, however, extend beyond this group of four African regional FTAs.

In the 1990s, the European Union (EU) negotiated FTAs with Central and East European countries where energy co-operation was promoted in a broad multi-sector context guided by sustainable development principles. The most common climate-relevant theme across these EU-centred agreements was the promotion of *energy efficiency*. This was aimed at redressing the past neglect of East European communist governments in this sector and mitigate significant levels of transboundary pollution affecting EU member states [87]. These provisions were, however, set within a relatively weak textual framing. For example, in both the EU's 1991 signed FTAs with Hungary and Poland under 'Energy Co-operation' (Articles 77.1 and 78.1, respectively), it simply states: "Cooperation shall take place within the framework of the principles of the market economy and develop against a background of progressive integration of the energy markets in Europe", and then details in the following sub-article a list of a dozen or so energy-related themes including "the promotion of energy saving and energy efficiency". Similarly, under 'Environmental Co-operation' (Articles 79 and 80, respectively), both agreements state that: "The Parties shall develop and strengthen their co-operation in the vital task of combating the deterioration of the environment, which they have judged to be a priority. Co-operation will centre on", followed again by a list of specific activity areas including "efficient energy production and consumption". While there was a regional dimension to the promotion of energy efficiency

in these EU-centred FTAs, it lacked a substantive basis on which to develop a *second-tier node* theme.

The first climate-relevant provisions found in FTAs negotiated by the United States in the 2000s had only tenuous climate action links. For example, the 2003 US–Chile FTA's commitment to "increased use of cleaner fuels" (Article 19.3h) and both the US–Central America–Dominican Republic FTA (2004) and US–Panama FTA (2007) mirrored provisions on the "maintenance of clean production technologies" (Articles 17.9 and 17.10, respectively), while the 2007 US–Korea FTA only measures related to vehicle fuel emission standards (Annex 9.B). Almost all other FTAs in study during this decade contained only one or two climate-relevant provisions that collectively were scattered across various provision type categories (Table 2). By this time, climate-relevant provision sections in FTAs typically contained between only 100 and 200 words, indicative of the thin textual substance of climate action measures in FTAs that persisted for some considerable time [88]. A possible explanation was that climate action had not sufficiently penetrated trade discourses, norms or narratives by the end of the 2000s [44].

Even at this stage of relatively weak climate action measures, however, a template analysis of FTA texts reveals an important general *second-tier node*, namely *co-operation* as the main operational framework of climate action measures in FTAs. This is significant in that only one provision type (type 8) has an explicit co-operation theme, yet operationally co-operation is relevant to most other provision types also. It is furthermore clearly the dominant such framework over the other evident *second-tier node* of *liberalisation*. 'Co-operation' in the FTA context refers broadly to mutual commitments by all signatory governments and other relevant parties to engage in new joint collaborative ongoing ventures, projects or other actions in ongoing processes with the aim of realising specific benefits and transformative outcomes. It is a dynamic and relational process that depends on dialogue frameworks to sustain and develop the co-operative activities concerned. Liberalisation is an intrinsic essence of an FTA, primarily focused on the one-off or phased removal of identified technical policy measures impeding trade, foreign investment, finance and other forms of international economic exchange. Thus, whereas in operational terms at least co-operation is primarily about the creation of something new, liberalisation is essentially about the elimination of existing barriers. There are circumstances, however, where liberalisation entails some form of ongoing trade partner co-operation as discussed later. Table 3 shows that co-operation was the focus of 84.6% of all climate-relevant provision wording in the 62 out of the total 69 agreements with pertinent content.

Table 3. Climate Action Co-Operation in FTAs.

No.	Free Trade Agreement	Year Sign	Thematic Heading	LEVEL				FEATURES			Words	Cooperation as % of All Climate-Relevant Provisions Text
				Optional	Intentional	Action-Structured	Programmatic	Institutionalised	Assistive	Multilateral-Supportive		
1	Economic Community of Central African States (ECCAS)	1983	Energy and Natural Resources			1					95	100.0
2	African Economic Community (AEC)	1991	Industry, S&T, Energy, Environment		1						118	100.0
3	EU–Hungary FTA	1991	Economic (Energy, Environment)			1					260	100.0
4	EU–Poland FTA	1991	Economic (Energy, Environment)			1					245	100.0
5	European Economic Area (EEA)–EU–EFTA	1992	–								–	–
6	North American Free Trade Agreement (NAFTA)	1992	–								–	–

Table 3. *Cont.*

No.	Free Trade Agreement	Year Sign	Thematic Heading	LEVEL				FEATURES			Words	Cooperation as % of All Climate-Relevant Provisions Text
				Optional	Intentional	Action-Structured	Programmatic	Institutionalised	Assistive	Multilateral-Supportive		
7	EU–Bulgaria FTA	1993	Economic (Energy, Environment)			1					210	100.0
8	EU–Romania FTA	1993	Economic (Energy, Environment)		1				1		112	100.0
9	EU–Slovakia FTA	1993	Economic (Energy, Environment)		1				1		162	100.0
10	Common Market for Eastern and Southern Africa (COMESA)	1993	Energy, Environment			1				1	337	100.0
11	Economic Community of West African States (ECOWAS)	1993	Industry, S&T, Energy; Meteorological			1					131	100.0
12	Economic and Monetary Community of Central Africa (CEMAC)	1994	Environmental Protection		1						103	100.0
13	EU–South Africa FTA	1999	Economic (Energy), Environment			1			1		396	100.0
14	East African Community (EAC)	1999	Infrastructure and Services (Energy, Meteorological)			1					186	100.0
15	EU–Chile FTA	2002	Economic (Energy)			1			1		127	100.0
16	US–Chile FTA	2003	Environment			1			1		104	100.0
17	US–Central America–Dominican Republic FTA	2004	Environment			1			1		162	100.0
18	Japan–Mexico FTA	2004	Environment			1			1	1	124	100.0
19	Taiwan–Guatemala FTA	2005	Energy			1			1		123	100.0
20	Taiwan–Nicaragua FTA	2006	Environment			1		1	1		108	100.0
21	Taiwan–El Salvador–Honduras FTA	2007	Energy			1			1		106	100.0
22	Japan–Brunei FTA	2007	Energy (Environment)		1				1	1	199	42.2
23	Japan–Indonesia FTA	2007	Energy and Mineral Resources		1				1	1	147	19.7
24	US–Korea FTA	2007	_								_	_
25	US–Panama FTA	2007	Environmental			1			1		59	100.0
26	Canada–Peru FTA	2008	_								_	_
27	EU–CARIFORUM EPA	2008	Eco-Innovation			1			1	1	159	80.3
28	China–Singapore FTA	2008	Economic		1						52	100.0
29	Chile–Turkey FTA	2009	Environment		1						97	100.0
30	China–Peru FTA	2009	Forestry and Environmental Protection			1		1	1		226	100.0
31	India–Korea FTA	2009	Energy			1					206	68.9
32	Japan–Switzerland FTA	2009	_								_	_
33	Chile–Malaysia FTA	2010	Environment			1		1			385	100.0
34	China–Costa Rica FTA	2010	Agriculture			1					170	100.0
35	EU–Korea FTA	2010	Trade and Sustainable Development (SD)			1		1		1	1429	82.3
36	Chile–Vietnam FTA	2011	Co-operation in general	1							19	100.0
37	EFTA–Hong Kong FTA	2011	Trade and Environment		1						28	27.3
38	EFTA–Montenegro FTA	2011	Trade and SD		1						132	100.0

Table 3. *Cont.*

No.	Free Trade Agreement	Year Sign	Thematic Heading	LEVEL			FEATURES				Words	Cooperation as % of All Climate-Relevant Provisions Text
				Optional	Intentional	Action-Structured	Programmatic	Institutionalised	Assistive	Multilateral-Supportive		
39	Korea–Peru FTA	2011	SMEs, Environment, Forestry			1					236	73.1
40	EU–Central America FTA (Association Agreement embedded)	2012	Environment, Trade and SD, Energy			1		1	1	1	506	73.7
41	EU–Colombia–Peru FTA	2012	Trade and SD (Climate Change)			1			1	1	463	90.7
42	Korea–Turkey FTA	2012	Trade and SD		1					1	93	74.2
43	Canada–Honduras FTA	2013	Environment	1							46	47.9
44	Chile–Thailand FTA	2013	Economic (Environment)	1							49	100.0
45	Korea–Colombia FTA	2013	Trade and SD (Forestry, Environment), SMEs		1						158	82.5
46	Colombia–Panama FTA	2013	Environment	1							36	100.0
47	New Zealand–Taiwan FTA	2013	–								–	–
48	EFTA–Bosnia and Herzogovina FTA	2013	–								–	–
49	EFTA–Central America FTA	2013	Trade and SD (Forestry)	1							64	57.1
50	EU–Ukraine FTA	2014	Economic (Energy, Environment, S&T), Trade and SD				1	1		1	424	83.6
51	EU–Moldova FTA	2014	Economic (Energy, Climate Change), Trade and SD				1	1		1	473	92.6
52	EU–Georgia FTA	2014	Economic (Energy), Trade and SD, Climate, Maritime				1	1	1	1	517	78.8
53	China–Korea FTA	2014	Intellectual Property Rights, Economic (Energy)		1				1	1	150	100.0
54	Australia–Korea FTA	2014	Agriculture, Forestry, Fisheries, Energy, Environment			1			1	1	368	90.4
55	Malaysia–Turkey FTA	2014	Economic and Technical (Energy, Environment)	1							73	100.0
56	Korea–New Zealand FTA	2015	Agriculture, Forestry, Fisheries, Energy, Environment			1			1	1	294	53.4
57	EFTA–Philippines FTA	2016	Trade and SD (Forestry)		1					1	76	55.1
58	EU–East Africa Community (EAC) EPA	2016	Infrastructure (Energy), Agriculture, Climate Change				1	1	1		226+	100.0
59	EFTA–Georgia FTA	2016	Trade and SD (Forestry)		1					1	82	63.6
60	Chile–Argentina FTA	2017	Trade and Environment (Climate Change)			1				1	193	58.1
61	EU–Canada FTA (CETA)	2017	Trade and Environment		1					1	275	77.5
62	EU–Armenia FTA	2018	Climate Change, Trade and SD, Energy, Industry				1	1	1	1	976	81.5
63	US–Mexico–Canada Agreement (USMCA)	2018	Environment (Maritime, Air Quality)		1			1			175	44.9
64	Comprehensive and Progressive Trans-Pacific Partnership (CPTPP)	2018	Environment (Low-Emission Economy, Maritime)		1			1			191	60.1

Table 3. *Cont.*

No.	Free Trade Agreement	Year Sign	Thematic Heading	LEVEL				FEATURES			Words	Cooperation as % of All Climate-Relevant Provisions Text
				Optional	Intentional	Action-Structured	Programmatic	Institutionalised	Assistive	Multilateral-Supportive		
65	EU–Japan FTA	2018	Trade and SD, Regulatory			1		1		1	251	63.5
66	EU–Singapore FTA	2018	Renewable Energy, Trade and SD				1	1		1	1228	86.7
67	Australia–Peru FTA	2018	Environment	1						1	54	42.2
68	EU–Vietnam FTA	2019	Trade and SD (Climate Change)				1	1		1	1368	94.4
69	Chile–Indonesia FTA	2020	Environment	1							37	100.0
				8	**18**	**29**	**7**	**15**	**23**	**24**	**249 ave**	**84.6% ave**

Notes: FTAs not in bold text indicate no co-operation provisions. Thematic headings in brackets indicate they were specific sub-headings under the broader theme noted before it or them.

The emphasis on co-operation over liberalisation was investigated deeper in this study's template analysis of FTA texts, from which *third-tier nodes* were developed to identify both: (i) progressive levels, and (ii) key common functional features of this co-operation. This helped determine further degrees of specificity regarding what kind of climate action measures have been incorporated into FTAs. Key word searches were again deployed in this process when differentiating between climate-relevant provisions here. The first set of third-tier nodes centres on four conceptual progressive levels of co-operation:

- *Optional*—parties do not expressly commit to co-operation on climate action but rather leave it optional, often using conditional language. Examples of key coded words relevant here are 'may', 'possible', and 'potential'.
- *Intentional*—explicit statements of intent to co-operate, often with climate-relevant issues identified, but lacking detail on actions, methods and objectives. Key coded words here included 'shall', 'will', and 'in order to'.
- *Action-Structured*—specific co-operative actions are outlined in detail within an actional framework or loose governance structure but with no set targets or schedules. Here, key coded words covered various types of action (e.g., workshops, training, information exchange, technology transfer, joint projects, technology development, infrastructure development) and at times involved agencies with reference to some sort of co-operation or governance process, e.g., 'regular dialogue'.
- *Programmatic*—the agreement contains a programmatic plan of specified actions, targets and schedules for co-operation in a well-defined governance structure with key coded words (e.g., plan and strategy, with reference to numeric targets, timeframes, and agencies) reflecting this. The governance structure aspect has links with 'institutionalised co-operation discussed later.

Table 3 shows the distribution of these levels achieved across relevant FTAs. More impactful forms of climate action will naturally arise from the latter two co-operation levels. By 'governance structure' we are referring mainly in this context to some kind of decision-making entity or arrangement with general responsibility to overseeing the co-operation outlined in the agreement. This is invariably non-existent in the first two co-operation levels, often quite weak at the *action-structured* level and strongest at the *programmatic* level. As Table 3 shows, *action-structured* co-operation has been constantly dominant, arising in 29 FTAs, yet the highest-level *programmatic* co-operation only appears relatively late from 2014 onwards with seven agreements out of the last 20 signed, indicating there remains much scope to deepen levels of climate action co-operation generally within FTAs. Regarding trade partner patterns, the EU is especially significant, being involved in

approximately one-third of the agreements and oriented towards higher-level co-operation. Moreover, it has recently signed agreements containing programmatic co-operation text of approximately 1000 words or more, over four-times the trade partner average as a secondary proxy measure of substantive co-operation. Most other active trade partners (Korea, Japan, Chile, Peru, Canada, China, Singapore, Australia, Malaysia, EFTA, Mexico and New Zealand) lie in the mid-level range.

A second set of third-tier nodes were identified and developed from this study's text analysis around three key common functional features of climate action co-operation in FTAs, these being:

- *Institutionalised*—co-operation is overseen or managed by a newly established institutional body created by the FTA on its implementation. This is a higher-form of aforementioned 'governance structure' in this context (e.g., a Co-operation Committee or similar agency) either specifically charged with responsibility for climate-relevant co-operation between signatory parties or with all trade-related co-operation outlined in the agreement.
- *Assistive*—commitment of parties to co-operate on climate action capacity-building issues (e.g., technology transfer, training) principally aimed at assisting the less developed trade partner.
- *Multilateral-Supportive*—pledges to co-operate in supporting wider international and multilateral efforts on climate action.

As we would expect, there is a strong correlation between *institutionalised* co-operation and the higher progressive forms of co-operation. However, not all instances of *action-structured* co-operation fell into this category: likewise, climate action co-operation in FTAs may have high-level institutionalisation but not be necessarily that ambitious. Nevertheless, FTAs with institutionalised co-operation are more likely to operationalise stated co-operative measures due to the organisational structures created to implement, manage and develop climate action co-operation between trade partners. Table 3 shows that this has become a steadily more important functional feature of co-operation. Meanwhile, *assistive* climate co-operation was particularly strong in the 1990s and 2000s, remaining a regular feature in the more recent time period. This may be explained by the developed-developing economy partnerships still being a key trend of climate-relevant FTAs. There has also been a growing trend of *multilateral-supportive* co-operation commitments in FTAs, especially from 2014 onwards. This mainly relates to support of UNFCCC global climate action efforts and aligning trade diplomacy more closely to this end generally. From a trade partner perspective, half the EU's 20 relevant FTAs contain both explicitly institutionalised co-operation and assistive co-operation features, and from 2008 all 12 of its climate-relevant FTAs have included multilateral-supportive co-operation provisions. Japan and Korea have both also been relatively active in this last area, and Korea's FTAs have a comparatively strong profile across all three features in relation to other trade partners.

Regarding the minor second-tier node of climate-relevant trade *liberalisation*, interestingly, no FTA makes reference in their main agreement text to any specific import duty reductions for climate-relevant products it may contain. This seems somewhat surprising but may be partly due to long-standing product classification disagreements amongst trade partners on deciding which goods and services qualify as having a climate action purpose. Examples often include component parts such generic ball bearings used in wind turbines and other engineering equipment, or drilling bits used in both geothermal energy and hydrocarbon exploration activity. The plurilateral Environmental Goods Agreement (EGA) trade liberalisation talks that lasted from 2011 to 2016 broke down due to such disagreements (Dent 2018). Many agreements will have nevertheless included measures—such as in their tariff and rules of origin schedules—to remove or reduce trade and investment barriers on products indisputably considered climate goods and services (e.g., fully assembled solar panels) as part of a generalised trade liberalisation process. Yet only 20 FTAs had contained in their main treaty text any reference to climate-relevant liberalisation process

by 2020. Within this set of agreements, a third-tier node text analysis was conducted, and the following six kinds or types of trade and investment liberalisation were identified:

A. Address or remove non-tariff barriers (NTBs) in environmental goods and services (EGS) trade/FDI generally—assumed to also cover climate-relevant products.
B. Address or remove NTBs in climate-relevant trade/FDI specifically—where climate-relevant products are explicitly referred to.
C. Remove any obstacles or barriers generally to climate-relevant or EGS products trade/FDI—broader in scope than the above.
D. Eliminate tariffs on EGS trade between the FTAs parties generally—on this particular measure and again assumed to cover climate-relevant products.
E. Work in international fora to liberalise EGS trade globally—thus extending beyond the trade of the FTA signatory parties.
F. Free movement of business-persons facilitating EGS trade and FDI—particularly pertinent to climate-relevant services trade.

These types of liberalisation measures mostly embed climate-relevant products in the broader EGS trade and investment context. Environmental goods and services include a wide range of products, many of which are not directly linked to or explicitly associated with climate action. Thus, such EGS references make the links here to climate action related liberalisation provisions in FTAs often inferred or implicit. Table 4 shows that *type A* is the dominant liberalisation measure, appearing in 16 (80%) of the relevant agreements. Measure *type C* was a distant second occurring six times, *type B* just four times while *type E* and *type F* have only been found in one agreement each. Liberalisation was also invariably situated in the context of 'promoting' trade and investment in EGS/climate-relevant products, with links to trade facilitation measures. *Type E* liberalisation has an overlap with what might also be construed as co-operative action but, as noted above, the emphasis of climate-relevant provisions here is clearly on conventional forms of trade liberalisation.

By way of bringing key elements of this discussion together, recent EU free trade agreements have set new benchmarks of climate action through FTAs and provide good examples of both progressive, multi-functional co-operation as well as liberalisation in this regard, including how these may be combined. For instance, its FTAs with Singapore (2018) and Vietnam (2019) have identical chapters on 'Non-Tariff Barriers to Trade and Investment in Renewable Energy Generation' that coalesce co-operation and liberalisation measures together. Article 7.1 of the chapter starts by stating: "In line with global efforts to reduce greenhouse gas emissions, the Parties share the objective of promoting, developing and increasing the generation of energy from renewable and sustainable non-fossil sources, particularly through facilitating trade and investment. To this effect, the Parties shall co-operate towards removing or reducing tariffs as well as non-tariff barriers, and shall cooperate on fostering regulatory convergence with or towards regional and international standards". The aim is thus to co-operate to achieve multiple inter-linked objectives, to use trade and foreign investment as drivers of clean energy development, to liberalise trade and investment in clean energy products, and work together on regulatory matters, and the technical details on all the above are outlined in subsequent articles in the chapters. Article 7.7 refers to each FTA's new formed Trade Committee that has institutional responsibility for implementing climate-relevant provisions, mainly focused on clean energy. Similar but not identical chapters on Trade and Sustainable Development in each agreement further augment and broaden trade partner climate action co-operation in wider multilateral (i.e., UNFCCC) contexts, and working together in the international community generally for "the promotion of energy efficiency, low-emission technology and renewable energy" (Chapter 12 in the EU–Singapore FTA, Chapter 13 in the EU–Vietnam FTA).

Table 4. Climate-Relevant Liberalisation in FTAs.

No.	Free Trade Agreement	Year Sign	A. Address or Remove NTBs in EGS Trade/FDI Generally	B. Address or Remove NTBs in Climate-Relevant Trade/FDI Specifically	C. Remove Any Obstacles or Barriers Generally to Climate-Relevant or EGS Products Trade/FDI	D. Eliminate Tariffs on All EGS Products	E. Work in International Fora to Liberalise EGS Trade Globally	F. Free Movement of Business Persons Facilitating EGS Trade and FDI
35	EU–Korea FTA	2010	1					
37	EFTA–Hong Kong FTA	2011	1					
38	EFTA–Montenegro FTA	2011	1					
40	EU–Central America FTA	2012	1	1	1			
41	EU–Colombia–Peru FTA	2012		1	1			
42	Korea–Turkey FTA	2012	1					
47	New Zealand–Taiwan FTA	2013	1			1		1
48	EFTA–Bosnia and Herzogovina FTA	2013	1					
49	EFTA–Central America FTA	2013	1					
50	EU–Ukraine FTA	2014	1					
52	EU–Georgia FTA	2014			1			
54	Australia–Korea FTA	2014	1					
57	EFTA–Philippines FTA	2016	1					
59	EFTA–Georgia FTA	2016	1					
61	EU–Canada FTA (CETA)	2017	1		1			
62	EU–Armenia FTA	2018	1		1			
63	US–Mexico–Canada Agreement (USMCA)	2018	1				1	
64	Comprehensive and Progressive Trans-Pacific Partnership (CPTPP)	2018	1					
66	EU–Singapore FTA	2018		1	1			
68	EU–Vietnam FTA	2019		1				
	TOTAL		**16**	**4**	**6**	**1**	**1**	**1**

Note: EGS—environmental goods and services.

Meanwhile, Chapter 4 of the EU–Armenia FTA (2018) on 'Climate Action' comprises a wide set of measures principally designed to assist the development of Armenia's climate action capacity at both national and international levels. Article 54 of this chapter outlines ten objectives of co-operation in this regard, including the development of a low-carbon development plan, various energy policy measures and a climate action strategy. Article 52 beforehand details the promotion of measures to facilitate this assistive co-operation, for instance technology transfers, sector-specific (e.g., clean energy) policies, education and training. This work is overseen by the FTA's Partnership Committee, working in a

similar institutional way to the EU's agreements with Singapore and Vietnam to manage trade partner co-operation across other aspects of the agreement. In another example, the earlier signed EU–East Africa Community FTA (2016) also contained measures with a strong assistive co-operation dimension, including in its Annex III a programmatic set of renewable energy development targets and plans linked to the agreement. In all these cases, FTAs have leveraged a broad range of climate actions in trade partner countries. We later discuss the prospects of these latest EU climate-relevant FTAs affecting other trade partner behaviour through norm leadership and influence. In sum, this study's template analysis of FTA texts clearly reveals particular levels and functional features of co-operation are the dominant observable kinds of climate action arising in FTAs, with clean energy being an underlying focus.

4.2. How Effective a Potential Positive Impact on Climate Action?

What potential positive impacts, then, can we expect climate action measures in FTAs to have? Low-level, non-institutionalised co-operation is likely to result in limited, non-evaluated outcomes, or ensuing actions simply subsumed into wider co-operation efforts between trade partners where the FTA's additional contribution to them may be minimal or not easily ascertained. Higher-level *action-structured* and *programmatic* co-operation is where we may expect more positive impacts to arise, this too depending on the effectiveness of *institutionalised* or other governance structure arrangements charged with the responsibility of managing co-operation.

In their own earlier assessment of climate action measures in trade agreements generally, Morin et al. [82] and Morin and Jinnah [56] assessed their potential impact across four themes. They assigned the most contributory significance and attention to *legalisation*, concerning enforceable laws and regulations embodied in trade treaties. Given that virtually all nations have become signatories to at least one FTA, the legislative structures and processes involved in legally implementing an agreement will vary enormously. The same applies to the effectiveness of its implementation, this in turn depending largely on various development-related capacities of signatory nations concerned. Generally speaking, it could certainly be argued that legally binding commitments within an FTA to undertake specified actions within certain timeframes are likely to have more defined and quantifiable impacts on trade-related behaviours. Indeed, we can expect that a legalised commitment by FTA partners to undertake climate-relevant co-operation would lead to more substantive results. However, it will depend on how and where the legalisation approach is applied. For instance, new rules on liberalising tariffs on climate-relevant goods may not result in much change if companies opt not to utilise them, this often occurring due to restrictive rules of origin regulations [89,90]. In a less passive and more proactive approach, legal measures in FTAs that lead to significant enhancements in the signatory governments' own general climate action laws and policies (e.g., more ambitious carbon emission targets) would have a more assured positive impact. Yet it may be more logical to use other types of agreement for such broad-focused legal commitments, especially where the links to trade are tenuous. In another example, an FTA could carry a legal commitment to zero carbon shipping in traded goods between signatory countries but here a multilateralised agreement (e.g., at International Maritime Organisation level) would be more practical.

Climate change itself is a global-level issue, and thus multilateral approaches to tackling it are critically important. As we have seen, a number of bilateral and regional FTAs contain measures (provision types 12, 13 and 14) aimed at supporting UNFCCC-based global efforts here, often re-affirming their existing legal commitments to reduce carbon emissions and thus negating the need for any regulatory duplication in FTAs. While then there is scope to apply the legalisation approach across all six trade-climate empirical domains—and this would result in more significant positive impacts—there are also many circumstances where countries negotiating FTAs with active climate policies will view other forms of international treaty and diplomacy more logical and effective to include legally-binding measures., Legalisation nevertheless represents an important frontier ahead

of climate action measures in FTAs if they are to become more impactful. The previously studied recent EU agreements with Singapore, Vietnam, Armenia and the East Africa Community interestingly all contain co-operative provisions aimed at facilitating climate action legislation and regulation, presenting a possible evolutionary way forward for future FTAs.

The other three themes noted by Morin et al. [82] and Morin and Jinnah [56] were innovation, replication and distribution. *Innovation* as previously discussed relates mainly to the introduction of new forms of climate-relevant provisions. *Replication* considers the pervasiveness or presence of a climate-relevant provision in trade agreement landscape. *Distribution* focuses on the profile of countries adopting them. All three themes connect closely the next section's discussion on emerging climate action *norms* in FTAs. The potential positive impact on climate action measures in FTAs will be also determined by trade partner factors. Approximately 90% of in force FTAs worldwide are *bilateral*, that is involving two signatory sides [2]. In certain FTAs, at least one 'signatory side' may be a regional group, such as the EU or EFTA, and in some cases both may be (e.g., EU–Central America), thus in these instances involving multiple trade partners. Nevertheless, the large majority of FTAs are purely bilateral with just two signatory countries, this also being the case for the 69 agreements found to have climate action measures (Table 2). This raises important questions about possible limited impact of their impacts, especially when we also take into consideration earlier discussed trade gravity factors where the bilateral trade partners are relatively small and geographically distant e.g., Malaysia–Turkey, Chile–Thailand. Even if purely bilateral FTAs are aggregated together, their collective climate action impact may be insignificant due to limited geographic and trade volume coverage, regardless of their measures' substance and ambition. This is less of an issue for regionally multilateralised FTAs, involving a large set of countries and may include influential trade powers such as the EU.

5. Climate Action Norm Leadership and Influence in FTAs

The previous section's examination of what kinds of climate action are arising in FTAs was primarily concerned with provisions in the agreements, using the template analysis approach. This section builds on that work and seeks to develop a deeper understanding of the patterns of action, who is shaping them and why. A norms analysis framework is used for this purpose and addresses this study's third set of research questions concerning whether certain climate action norms are being promoted by trade partners in FTAs and if so, then who are the norm leaders, what is motivating them, and to what extent are they extending their influence over other trade partners?

5.1. Norms Analysis: A General Overview

Norms relate to actions, ideas or practices that become commonly adopted by actors, forming the basis of standardised or 'normalised' behaviour although this can arise on multiple levels, from the highly generalised to deeper and more specific norms [91]. They are generally viewed in sociological terms, and FTAs can provide the basis for establishing norm structures that shape patterns and structures of policy practice amongst actors. Finnemore and Sikkink [92] propose that norms can be regulative (ordering and constraining actor behaviour) or constitutive (creating new categories of action, interests and agency), the latter being most relevant to this study's findings. In addition, *norm leadership* (and relatedly, *norm entrepreneurship*) can play a key role in shaping a particular regime, such as trade. This is achieved through the exercise of *norm influence*, which has three progressive stages: (i) 'emergence stage', where norm leaders through innovative practice and behaviour try to persuade other actors to emulate them; (ii) 'acceptance stage', a critical mass of actors have adhered to a new norm of practice and becomes gradually accepted in the wider actor community through socialisation, demonstration and institutionalisation effects; (iii) 'internalisation stage', where a new norm becomes default practice amongst the majority of conforming actors, at often codified into law and regulation within relevant

governance structures. There are close connections with the earlier noted concepts on FTA provision impact: *innovation* with norm entrepreneurship, and *distribution* and *replication* with the above three progressive stages of norm influence.

For norm leaders to succeed, they require adequately strong organisational platforms—such as a robust diplomacy apparatus or network—on which to innovate and promote new norms through replication and distributive efforts. These may call attention to specific issues such as climate change, or even frame them in a particular way conceptually or within certain narratives, discourses or modes of language. Such 'cognitive framing' is a key political strategy of norm leaders, establishing new public understandings of the issues concerned [92,93]. Norm leadership and influence may also depend on different forms of power capacity, whether this be for example soft power (e.g., strong projections of socio-cultural influence), material-based power (e.g., economy or market size, economic resources) or structural power (e.g., capability to shape international governance structures such as the WTO trade rules regime), these all being relevant to trade relations and can overlap with each other [44,94–96]. For instance, both soft and material-based power can strengthen and provide leverage for exercises of structural power in establishing new norms in multilateral or mega-regional FTAs, such as the US's regulatory imprint on the Trans-Pacific Partnership agreement [97]. It could be argued that more effective climate action is likely to arise where FTAs create new norms of common good practice around which more concerted and aligned international efforts can emerge and coalesce, these then forming the basis of new trade-climate governance regimes. These norms may form organically through a broad international effort, or though the actions of a singular or few dominant trade partners.

5.2. Climate Norms Leaders and Influencers?

The different tier nodes of climate action in FTAs established in the previous section's template analysis may also be considered as trade-climate norms. For example, we saw how many climate-relevant provisions found in these agreements strongly clustered around clean energy sector development for reasons discussed earlier, and that trade-related co-operation was the most commonly adopted or normalised framework under which climate action is operationalised. These more generalised norms have arisen from essentially an organic process over time rather than directed or led by any particular trade partner or norm leadership. Furthermore, heterogeneity has in one sense has been the norm in many aspects of climate-relevant provisions in FTAs. For example, these have been placed under 23 different co-operative thematic headings in total (Table 3), indicative of the multiple issue-linkage connections across the six trade-climate empirical domains. While 'environment co-operation' and 'energy co-operation' were popular themes, this somewhat random general pattern also reflects a frequent outcome in bilateral FTAs *per se*, especially when the trade partners themselves are relatively small-to-medium sized economies and have limited capacity or inclination to develop their own well-defined norms of trade-related policy practice.

It has only been in the last decade, though, that climate action activity in FTAs has markedly intensified and developed far more critical mass, from which more discernible instances of norm leadership and influence can be observed. To help set the context for this analysis, Figures 1 and 2 show trade partner linkages on climate-relevant FTAs, up to 2010 and 2020, respectively. The 'bandwidth' links between trade partners represent the range of climate-relevant provision types covered in their agreement. A step change in activity is clearly evident from Figure 1 to Figure 2 both in terms of linkages and trade partner engagement. At a general level, we may expect trade partners with the most significant provision bandwidth and larger number of agreements to be the most likely norm leaders and influencers. The EU is at the centre of both Figures in acknowledgement of this and has been by far the strongest climate norms leader and influencer in FTAs. The EU was one of the earliest protagonists of climate action measures in FTAs (Table 2) and has been an important innovator, introducing six of the 14 provision types (Table 1) and extending the

reach of many types into new areas of trade partner co-operation. Let us first examine its broader motivations and interests regarding trade-climate matters generally to understand its norms behaviour, including how the EU's position here developed institutionally.

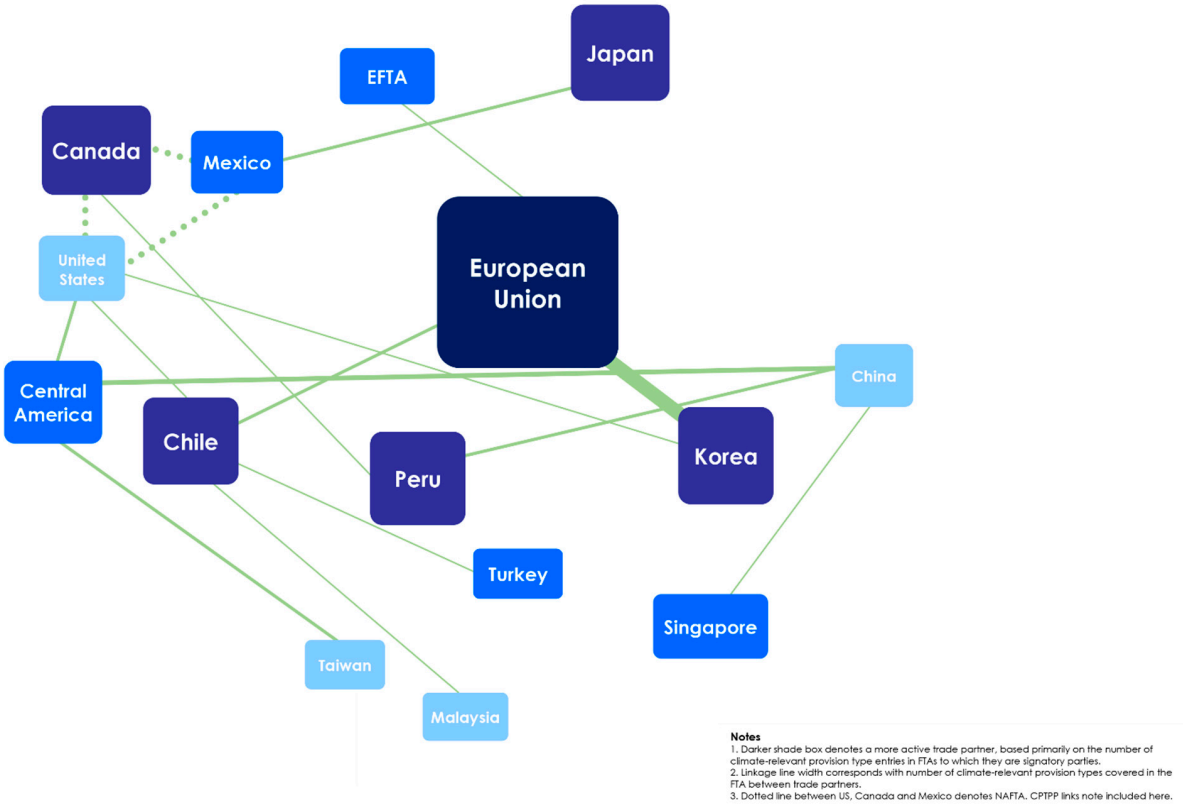

Figure 1. Climate-Relevant FTA Linkages between Main Active Trade Partners, by 2010.

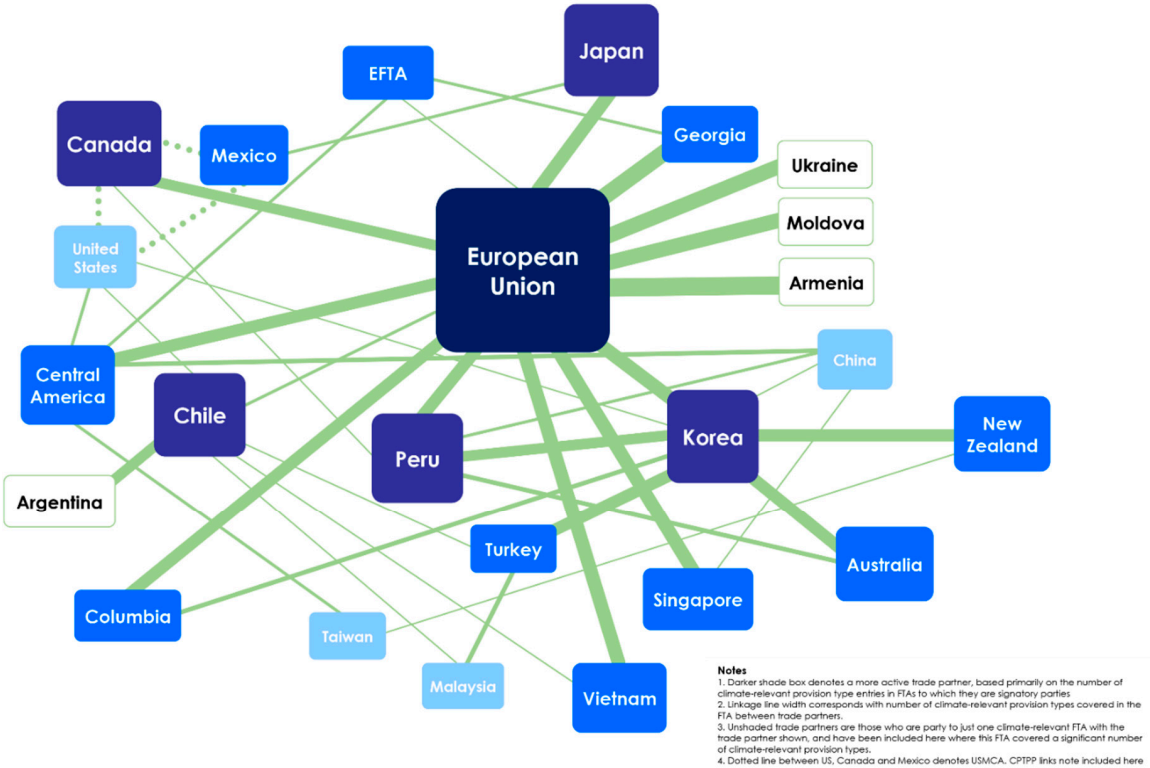

Figure 2. Climate-Relevant FTA Linkages between Main Active Trade Partners, by 2020.

Europe is known for its strong socio-cultural values and policies on environment and climate change, and relatively early on EU leaders identified climate diplomacy as an area where Europe could establish a global leadership position [98]. The 1986 Single European Act introduced obligations for member states to integrate environmental protection into all EU policies, including trade [99]. The European Commission's *White Paper on Growth, Competitiveness and Employment* [100], imbued with ecological modernisation thinking (e.g., trade and green growth), further established the EU as arguably the strongest global leader on environmental issues by this time, especially on climate change [36,101]. Later that decade, the 1997 Amsterdam Treaty acknowledged sustainable development as a core EU objective to be pursued both internally and in Europe's external relations, hence trade. In 2006, the EU revised its new Sustainable Development Strategy, updating the earlier 2001 version, and called for increased efforts to use international trade to achieve global sustainable development through the incorporation of more ambitious environmental measures in EU trade agreements [102,103]. This involves Sustainable Impact Assessments that had been included in all EU-signed trade agreements since 2000, these being more rigorous than their US counterparts [99,104]. These principles and goals were also incorporated into the EU's *Global Europe—Competing in the World* strategy policy document also published in 2006, stating that new 'competitiveness-driven' FTAs would include provisions on environmental co-operation with trade partners and at the global multilateral level.

The EU possesses a strong and sophisticated *organisational platform* on which to conduct a common trade policy, comparable in many respects to the United States in terms of trade power capacity. The EU's push for global leadership on climate action can be understood in the wider context of the EU's norm leadership more generally on a range of global issues, what Manners [105] refers to as 'Normative Power Europe' (NPE). This concept is based around a set of values and norms, including on sustainability and climate action, and how the EU projects itself and its norms on the world stage through various diffusion mechanisms, including through a powerful trade diplomacy apparatus. Another key source of EU trade norm influence derives from the concept of 'Market Power Europe', founded on the Single European Market, the EU's market regulatory capacities and how the EU externalises its rules, standards and other market governance norms either explicitly or implicitly through a range of diplomatic channels and instruments at its disposal [106–108]. There is a close overlap here with NPE, but MPE is more centred on the EU's regulatory, technical and material capacities. Taking these two concepts together, the EU has both significant *power capacities* regarding climate norm leadership and influence in FTAs.

Bastiaens and Postnikov [36] argue that on trade-related environmental issues in its trade diplomacy, the EU adopts a 'soft judicial' approach in contrast with the US's more assertive legal-contractual approach. For example, although EU trade agreements include expert review panels adjudicating on non-compliance issues, there are no financial penalties if panel rulings are not complied with. Instead, the EU uses its Civil Society Dialogue process that bring together all relevant parties to resolve compliance and implementation issues. This dialogical approach is consistent with the Normative Power Europe emphasis on persuasion not coercion, and notably contrasts with the US' hard legal-contractual approach of sanctions and fines. Furthermore, the EU generally eschews the US's 'boilerplate' approach to FTA negotiation, allowing for more flexibility and responsiveness to the interests of its trade partners. Nevertheless, an analysis of FTA texts where the EU is a party reveals evidence of *replication* where the European Union is clearly the norm influencer. As discussed earlier, for example, it negotiated the inclusion of very similar clean energy sector provisions in its FTAs with Central and East Europe states during the 1990s. This created a wider regionalised *distribution* of climate action measures in trade agreements across Europe, and where *norm acceptance* arose from the pre-accession conditions set by the EU in alignment with its deeper institutionalisation of trade-climate policy linkages.

A similar pattern of norm influence could be observed in the EU's multiple FTAs with Ex-Soviet republic states in the mid-to-late 2010s: the first three (Georgia, Moldova and Ukraine signed in 2014) were simultaneously negotiated, while the fourth and last FTA

with Armenia (2018) was based on them. At a general observational level, Table 2 shows a strikingly similar and wide pattern of climate-relevant provision types across all four agreements. More specifically, their starting Preamble sections have a verbatim common commitment to "promoting energy efficiency and the use of renewable energy sources", with relatively greater emphasis on energy efficiency through the treaty texts (mentioned between 7 and 10 times) thus some parallels exist here with the EU's norm influence on clean energy towards Central and East European nations in the 1990s. Examination of the FTA texts reveal very similar climate action measures set within the same multiple trade-related co-operation sectors, e.g., energy, economic, climate change, trade and sustainable development (see Table 3). In its advocacy of climate multilateralism, the EU also negotiated for stronger *norms compliance* with UNFCCC general efforts on climate change, and more specifically with the Kyoto Protocol. All four countries were additionally compelled to adopt within the agreements' Annex section a very similar wide range of EU Directives on environmental legislation, many being climate action related but not necessarily set within an explicit trade context. The EU's treaties with these countries were technically 'Association Agreements' that could be best described as FTA-plus pacts, where trade partners are obliged to enact certain EU laws and regulations to gain the benefits of associate EU membership. Although this substantive example of norm influence was arguably non-trade related, these FTAs were used by the EU to normalise stronger climate action policies and behaviour in these trade partners.

However, in both sub-sets of trade partner cases, the climate norms promoted by the EU were both time phase and group specific, thus with limited *replication* effects and only a very general pattern of norm continuity on energy efficiency measures being evident. Aside from the degree of reflexivity in the EU approach to FTAs, reasons for the lack of more specificity in EU norm influence could be explained by the different sets of trade negotiators employed over this 20 year period, and how the EU's own climate norms themselves will have evolved in light of new ideas and events, e.g., UNFCCC climate diplomacy. While the earlier discussed case of the EU's agreements with two Southeast Asian nations (Singapore and Vietnam) highlighted close replication of programmatic, multi-functional co-operation and other substantive climate action measures, this was a much smaller sub-set case and their future norm influence may be limited to its specific sub-set parameters, i.e., other Association of Southeast Asian Nations (ASEAN) trade partners. It was previously argued that these set new benchmarks of climate action in FTAs but they may not set new significant norms of practice outside their sub-set.

It took some time, however, for the EU to emerge as some form of climate norm leader and influencer. Early climate-relevant FTAs it signed had narrow provision type bandwidth (Table 2) and lacked substance (Table 3). The key turning point was the EU–Korea FTA (2010), containing nine provision types, over 1400 words of climate-relevant provision text (i.e., approximately seven times the FTA average up to this point) and was the first to include provision type 2 (carbon trading and market instruments) and measures on climate goods trade liberalisation. This FTA was a watershed moment in climate norm development in trade relations and diplomacy generally and was the outcome of the following inter-related factors. Around this time, some form of climate action partnership was crystallising between the EU and Korea. Both had devised strong green growth strategies augmented by substantial counter-cyclical fiscal responses to the 2008 Global Financial Crisis [109]. The Korean government under President Lee Myung-bak also had ambitions for the country to become a 'green power' on the wider international stage founded on promoting green growth norms worldwide and where trade diplomacy was instrumental in achieving this objective [110,111]. In 2010, the Korean government established the Global Green Growth Institute (one its four priority areas being clean energy) and also won the bid to host the UNFCCC's new Global Climate Fund that provides multilateral financial support for green growth projects in developing countries. Korea also possessed the strongest economic and technocratic capacities of any trade partner outside Europe that the EU had negotiated a climate-relevant FTA with by this time [112,113]. The country was thus

both a willing, capable climate norms partner the EU could work with in developing this landmark agreement.

The EU's most significant new advancement on climate norms achieved through the EU–Korea agreement was the introduction of 'Trade and Sustainable Development' as a thematic chapter or section that cognitively framed many climate action measures in later FTAs [114]. This was of importance in a wider *replication* and *distributional* sense where climate-relevant provisions being adopted or emulated by third-country parties, and thus the EU's climate norm leadership and influence was attaining a broader and deeper level of *acceptance*. Table 3 shows that in addition to the EU, which deployed this approach to subsequent agreements (the only exception being with Canada), another 15 trade partners had applied the 'Trade and Sustainable Development' thematic norm in their own FTAs. All subsequent European Free Trade Association (EFTA) group agreements under study after 2011 adopted a 'Trade and Sustainable Development' theme, albeit its constituent climate-relevant provisions being rather narrow focused. The same applies to Korea's agreements with Turkey (2012) and Columbia (2013). Its FTAs with Australia (2014) and New Zealand (2015) did not, though, include this thematic norm. These were two experienced and technocratically strong FTA negotiating countries, whose closely aligned interests on agriculture prevailed to set the norm context on climate-relevant provisions in their agreements with Korea. However, the new FTA norm of support for the 'international climate change regime' introduced in the EU–Korea FTA can too be found in Korea's agreements with Australia and New Zealand, as well as all but one of EU agreements signed afterwards. Furthermore, Korea's FTAs with these two countries are by far the most ambitious both had signed of climate relevance by 2020, suggesting Korea exercised some level of general norm influence over its two fellow Asia-Pacific nations.

What then of the United States? This study's data clearly show that the US has remained a minor climate norms actor in FTAs (Table 2, Figures 1 and 2). This is despite being a very significant *environmental* norms actor in trade diplomacy more broadly. The US is party to just six FTAs with climate-relevant provisions, these collectively containing only nine in total, compared to the EU's 127. The promotion of climate-relevant goods and services in the 2018 USMCA—its most recent agreement—is only implicit through its generic reference to 'clean technologies' (Article 24.24) and is moreover uniquely set within a strong 'green growth and jobs' ecological modernisation context. USMCA's reduction in GHGs provision (type 6) derives solely from its addressing of 'emissions from ships' (Article 24.10e) within the North America region, thus framed more in localised sea and air pollution terms than global GHG emissions mitigation. The environment chapter of the 2018 Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP, the revised TPP) is heavily based on the US FTA model, and thus the country's own domestic legislation [97,115]. Although ironically President Trump withdrew the US from the CPTPP, there are striking similarities between this agreement and the USMCA. For example, Article 20.6 of the CPTPP that covers 'emissions from ships' is taken more or less *verbatim* from USMCA's Article 24.10. The US has arguably even stronger trade-related norm leadership and influence capability than the EU. Consistent with its underperforming climate diplomacy, the US has remained an outlier actor on climate action through FTAs. Meanwhile Japan—the third-ranked implementer of climate-relevant provisions (27 in total) after the EU and Korea—has adopted a reflexive and bespoke approach to each FTA partner, with no evident attempt to regularise particular climate norms in its free trade agreements.

In sum, the only stand-out climate norms leader and influencer in FTAs—the European Union—has achieved relatively limited and generalised impact in this regard, and Korea is the only other notable norm influencer. Any level of climate norm *acceptance* achieved from a wide *replicated* and *distributional* perspective in the 69 FTAs in study has involved either a generalised cognitive framing of climate-relevant provisions (e.g., Trade and Sustainable Development as a thematic norm), or a relatively narrow range of provisions. Where the EU has achieved substantive climate norm influence in FTAs has been limited to small sub-sets

of trade partners. Thus, after approximately 40 years of climate action measures in FTAs, there remains very little evidence of these forming around any trade partner determined standard norms of trade, energy or other types of policy practice and behaviour. Instead, only very generalised norms here have arisen approaching a universal level, centred in climate action co-operation, through a largely organic evolutionary process involving contributions from multiple trade partners, albeit where the EU has set new benchmarks. On balance, heterogeneity thus prevails, which at least provides a conducive environment for policy and norm *innovation*. To make the most of this opportunity, though, more trade partners need to commit to introducing more substantive and impactful climate-relevant measures, as discussed in the previous section.

6. Conclusions

Trade's importance in shaping today's global economy and system continues to grow. As a consequence, trade is an increasingly vital front for tackling climate change. In recent times, trade policy and relations between countries have become dominated by free trade agreements (FTAs) that now cover approximately two-thirds of global trade flows. Over the last decade, the number and substance of climate action measures in FTAs have also grown. This is indicative of and integral to the changing nature of trade policy, and its deepening interconnections with energy policy. It was argued in this study that the burgeoning climate action agenda and the recent expansion of FTAs has provided an opportunity for trade partners to innovate with new forms of energy trade policy, especially regarding the clean energy sector. This study has comprehensively examined all climate action measures found within all FTAs worldwide currently in force and discusses key questions concerning the importance of these agreements in tackling climate change. These questions form the basis of three areas of enquiry. The first considers the extent to which climate-relevant provisions in FTAs are essentially derivative of energy's connections with trade, and thus part of a wider trade–climate–energy nexus. This helped establish important inherent features and the nature of climate action measures found in these agreements. From an examination of the literature on the subject, six empirical domains of the trade–climate relationship were established, energy being in some way integral to each of these. These empirical domains provided an important frame for this study's analysis and discussion.

The second area of enquiry centred on what different kinds of climate action are FTAs specifically promoting, and how effective a potential positive impact may we expect these to have. A template analysis methodological approach was used for this purpose, drawing upon the six empirical domains to establish 14 different climate-relevant provision types found in FTA texts. A strong orientation towards the clean energy sector was evident at this first-tier node-level analysis, and further investigation of the aggregated text revealed that *co-operation* and not liberalisation has been the main operational framework in which climate action measures are incorporated into FTAs. This may be somewhat contrary to expectations given that FTAs are normally conceived as being intrinsically about liberalising trade. This climate action co-operation has taken many forms, and this study's deeper analysis of the FTA texts revealed its different progressive levels and key common functional features. Analytical results showed a slow gradual movement toward more *action-structured* and *programmatic* co-operation but with a high degree of dependence here on EU involvement. The same applied to *institutionalised* co-operation, although a wide range of trade partners have engaged in both *assistive* and *multilateral-supportive* functional co-operation. Liberalisation-related climate action in FTAs has arisen in just a relative handful of agreements and in most instances by rather tenuous link through tackling non-tariff barriers on environmental goods and services in general.

It was argued that the impact of these largely co-operative measures could be limited and difficult to assess given that many are somewhat diffuse and open-ended in nature. In ideal terms, sustained and substantive climate action co-operation fostered through FTAs can help shape what kind of trade (*composition* and *technique* effects) develops in the longer term, this in turn having a positive climate action outcome—for example, where

trade partners work collaboratively to strengthen trade capacity in their clean energy sectors, or on designing carbon trading instruments. Yet provisions with legally binding commitments to undertake specified climate actions within certain timeframes are likely to have more defined, quantifiable impacts and lead to more substantial positive results. It was also argued, though, that the legalisation approach may in certain cases have limited impact on trade-related climate action, and in others would be more appropriate in other kinds of international agreement. This study observed that an increasing number of FTAs contain provisions that support and re-affirm existing legal commitments to reduce carbon emissions under the UNFCCC climate regime, and that recently negotiated FTAs by the EU included co-operative measures aimed at facilitating climate action legislation and regulation. It was contended that on balance, legalisation is a vitally important future front on which FTAs can have greater climate action impact. Future advances in legalisation may, however, be easier to achieve in certain trade-climate empirical domains (e.g., environmental and technical standards, promotion and liberalisation of trade) than others. For instance, while carbon-related measures involve numerous legalisation-based policy instruments, carbon tariffs or border carbon adjustments are often viewed as forms of trade protectionism, and thus problematic to include in free trade agreements.

This study's third area of enquiry considered whether certain climate action norms are being promoted by trade partners in FTAs and if so, then who are the norm leaders, what is motivating them, and to what extent are they extending their influence over other trade partners. Based on its strong socio-cultural values and policies on climate change, power capacities, organisational platform and aspirations on global climate diplomacy, the EU has been the main climate norms leader and influencer in these agreements. This study found some evidence of significant EU climate norms influence but this was limited to a few relatively small sub-sets of trade partners, these often regionally defined. Thus, while the EU has for example managed to leverage the adoption of stronger clean energy policies in trade partners through these agreements, this has been both very time phase and group specific, thus with limited *replication* or *distribution* effects.

At a more generalised norms leadership and influence level, the EU has introduced new cognitive framings of climate action measures that have been adopted by a wider international range of trade partners, the most important being the normative theme of 'Trade and Sustainable Development'. This norm influence, though, has lacked depth of impact. On a broader point, the EU has not pushed a boilerplate model of climate norms in FTAs to be universally applied to all its trade partners and is more reflexive generally than the US in its negotiating approach. This study also found that Korea is the only other trade partner to have exercised any real norms influence but this was extremely limited. Thus, while it is evident that certain climate actions normshave emerged somewhat organically within FTAs around provision type (where the clean energy sector figures highly) and a mainly co-operation-based operational framework, not even the EU has proved itself a significant climate norms leader or influencer. The US meanwhile has remained an outlier. Heterogeneity thus still more or less prevails with respect to climate action measures in free trade agreements, which in many respects is conducive to trade–climate–energy policy innovation. However, this relies on trade partners other than the EU setting new innovative benchmarks on substantive climate-relevant provisions.

This study has thus shown that there is still much work to carry out on climate action through FTAs, and more trade partners must innovate and become far more ambitious in this respect. This study concludes by making three final summative key points. First, (clean) energy will remain an essential core element of climate action measures in FTAs, providing important opportunities to develop new forms of energy trade policy in the future. Second, a more expansive legalisation of these measures will empower the potential impact of FTAs on climate action generally, but caveats exist and, as discussed, certain legalisation measures may be incompatible with the aims and scope of a free trade agreement. Third and lastly, despite a marked intensification of climate action measures in FTAs over the last decade, as well as significant new policy innovation during this time, international

norms of practice on this important and still emerging frontier of the trade–climate–energy nexus remain relatively weak and patchy. With this point in mind, global governance institutions such as the WTO and the UNFCCC need to become more proactively involved in managing the deepening links between the global trade system and climate change, to both strengthen and better co-ordinate worldwide efforts on this vitally important area.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The author declares no conflict of interest.

References

1. World Bank. *Database on Trade*; World Bank: Washington, DC, USA, 2021.
2. World Trade Organisation/WTO Regional Trade Agreements Database 2021, WTO Secretariat: Geneva. Available online: https://rtais.wto.org (accessed on 30 June 2021).
3. Bernauer, T.; Nguyen, Q. Free Trade and/or Environmental Protection? *Glob. Environ. Politics* **2015**, *15*, 105–129. [CrossRef]
4. Cole, M.A. Trade, the Pollution Haven Hypothesis and Environmental Kuznets Curve: Examining the Linkages. *Ecol. Econ.* **2004**, *48*, 71–81. [CrossRef]
5. Leitão, N.C.; Lorente, D.B. The Linkage between Economic Growth, Renewable Energy, Tourism, CO_2 Emissions, and International Trade: The Evidence for the European Union. *Energies* **2020**, *13*, 4838. [CrossRef]
6. WTO-UNEP. *Trade and Climate Change 2009*; WTO Secretariat: Geneva, Switzerland, 2009.
7. Abman, R.; Lundberg, C. Does Free Trade Increase Deforestation? The Effects of Regional Trade Agreements. *J. Assoc. Environ. Resour. Econ.* **2020**, *7*, 35–72. [CrossRef]
8. Peters, G.; Hertwich, E. CO_2 Embodied in International Trade with Implications for Global Climate Policy. *Environ. Sci. Technol.* **2008**, *42*, 1401–1407. [CrossRef]
9. OECD. *The Carbon Footprint of Global Trade*; OECD: Paris, France, 2016.
10. Partain, R.A. Climate Change, Green Paradox Models and International Trade Rules. In *Research Handbook on Climate Change and Trade Law*; Delimatsis, P., Ed.; Edward Elgar: London, UK, 2016.
11. Copeland, B.R.; Taylor, M.S. *Trade and the Environment*; Princeton University Press: Princeton, NJ, USA, 2003.
12. OECD. *Methodologies for Trade and Environmental Reviews*; OECD: Paris, France, 1994.
13. Hayhoe, K. Foreword. In *Ecotheology*; Jorgenson, K.A., Padgett, A.G., Eds.; Eerdmans: Grand Rapids, MI, USA, 2020.
14. Barrett, S. The Strategy of Trade Sanctions in International Environmental Agreements. *Resour. Energy Econ.* **1997**, *19*, 345–361. [CrossRef]
15. Chaytor, B.; Cameron, J. *Taxes for Environmental Purposes: The Scope for Border Tax Adjustment under WTO Rules*; World Wildlife Fund: Gland, Switzerland, 1995.
16. Demaret, P.; Stewardson, R. Border tax adjustments under GATT and EC law, and general implications for environmental taxes. *J. World Trade* **1994**, *28*, 5–66.
17. Hoerner, A.; Muller, F. *Carbon Taxes for Climate Protection in a Competitive World*; University of Maryland Press: Baltimore, MD, USA, 1996.
18. Von Moltke, K. International trade, technology transfer and climate change. In *Confronting Climate Change*; Mintzer, I.M., Ed.; Cambridge University Press: Cambridge, UK, 1992.
19. Cottier, T.; Nartova, O.; Shingal, A. *The Potential of Tariff Policy for Climate Change Mitigation: Legal and Economic Analysis*; UNCTAD: Geneva, Switzerland, 2011.
20. Goh, G. The World Trade Organisation, Kyoto and Energy Tax Adjustments at the Border. *J. World Trade* **2004**, *38*, 395–423.
21. Harrison, K. International Carbon Trade and Domestic Climate Politics. *Glob. Environ. Politics* **2015**, *15*, 27–48. [CrossRef]
22. Helm, D.; Hepburn, C.; Ruta, G. Trade, climate change, and the political game theory of border carbon adjustments. *Oxf. Rev. Econ. Policy* **2012**, *28*, 368–394. [CrossRef]
23. Mehling, M.A.; Van Asselt, H.; Das, K.; Droege, S.; Verkuijl, C. Designing Border Carbon Adjustments for Enhanced Climate Action. *Am. J. Int. Law* **2019**, *113*, 433–481. [CrossRef]
24. Morris, A. *Making Border Carbon Adjustments Work in Law and Practice*; Tax Policy Centre: Washington, DC, USA, 2018.
25. Vranes, E. Carbon Taxes, PPMs and the GATT. In *Research Handbook on Climate Change and Trade Law*; Delimatsis, P., Ed.; Edward Elgar: London, UK, 2016.
26. Zhang, Z. Greenhouse Gas Emissions Trading and the World Trading System. *J. World Trade* **1998**, *32*, 219–239.
27. Dent, C.M. Clean Energy Trade Governance: Reconciling Trade Liberalism and Climate Interventionism? *New Political Econ.* **2018**, *23*, 728–747. [CrossRef]
28. *E15 Initiative Clean Energy Technologies and the Trade System: Proposals and Analysis*; ICTSD/E15 Initiative: Geneva, Switzerland, 2013.

29. ICTSD. *Linking Trade, Climate Change and Energy*; International Centre for Trade and Sustainable Development (ICTSD): Geneva, Switzerland, 2006.
30. Lewis, J. The Rise of Renewable Energy Protectionism: Emerging Trade Conflicts and Implications for Low Carbon Development. *Glob. Environ. Politics* **2014**, *14*, 10–35. [CrossRef]
31. Holzer, K.; Shariff, N. The inclusion of border carbon adjustments in preferential trade agreements: Policy implications. *Carbon Clim. Law Rev.* **2012**, *6*, 246–260. [CrossRef]
32. ICTSD. *Climate Change and Sustainable Energy Measures in Regional Trade Agreements*; ICTSD: Geneva, Switzerland, 2013.
33. Leal-Arcas, R. Trade Proposals for Climate Action. *Trade Law Dev.* **2014**, *6*, 11–54.
34. Morin, J.F.; Dür, A.; Lechner, L. Mapping the Trade and Environment Nexus: Insights from a New Data Set. *Glob. Environ. Politics* **2018**, *18*, 122–139. [CrossRef]
35. Brandi, C.; Schwab, J.; Berger, A.; Morin, J.-F. Do environmental provisions in trade agreements make exports from developing countries greener? *World Dev.* **2020**, *129*, 1–22. [CrossRef]
36. Bastiaens, I.; Postnikov, E. Greening up: The effects of environmental standards in EU and US trade agreements. *Environ. Politics* **2017**, *26*, 847–869. [CrossRef]
37. Holzer, K.; Cottier, T. Addressing climate change under preferential trade agreements: Towards alignment of carbon standards under the Transatlantic Trade and Investment Partnership. *Glob. Environ. Chang.* **2015**, *35*, 514–522. [CrossRef]
38. Konishi, H.; Nakada, M.; Shibata, A. Free Trade Agreements with Environmental Standards. In *Kyoto Institute for Economic Research Discussion Paper Series*; Kyoto University: Kyoto, Japan, 2020.
39. ICTSD. *International Transport, Climate Change and Trade*; ICTSD: Geneva, Switzerland, 2010.
40. Monkelbaan, J. *Transport, Trade and Climate Change: Carbon Footprints, Fuel Subsidies and Market-based Measures*; ICTSD: Geneva, Switzerland, 2011.
41. Shapiro, J.S. The environmental bias of trade policy. *Q. J. Econ.* **2021**, *136*, 831–886. [CrossRef]
42. Vohringer, F.; Grether, J.M.; Mathys, N.A. Trade and Climate Policies: Do Emissions from International Transport Matter? *World Econ.* **2013**, *36*, 280–302. [CrossRef]
43. Yao, X.; Yasmeen, R.; Li, Y.; Hafeez, M.; Ihtsham Ul Haq Padda, I.U.H. Free Trade Agreements and Environment for Sustainable Development: A Gravity Model Analysis. *Sustainability* **2019**, *11*, 597. [CrossRef]
44. Eckersley, R. Understanding the Interplay between the Climate and Trade Regimes. In *Climate and Trade Policies*; UNEP: Geneva, Switzerland, 2009.
45. Epps, T.; Green, A. *Reconciling Trade and Climate: How the WTO Can Help Address Climate Change*; Edward Elgar: Cheltenham, UK, 2010.
46. Werksman, J. Greenhouse Gas Emissions Trading and the WTO. *Rev. Eur. Community Int. Environ. Law* **1999**, *8*, 251–264. [CrossRef]
47. World Trade Organisation/WTO. *The Interface between the Trade and Climate Change Regimes: Scoping the Issues*; WTO Secretariat: Geneva, Switzerland, 2011; Staff Working Paper ERSD-2011-1.
48. Enerdata. *Global Energy Trends*; Enerdata: Grenoble, France, 2021.
49. Leal-Arcas, R.; Abu Gosh, E.S. *Energy Trade as a Special Sector in the WTO: Unique Features, Unprecedented Challenges and Unresolved Issues*; School of Law Legal Studies Research Paper Series; Queen Mary University of London: London, UK, 2014.
50. Miller, S. Energy Trade and GATT Rules: Is Something Missing? Hinrich Foundation. Available online: https://www.hinrichfoundation.com/research/tradevistas/wto/energy-trade (accessed on 2 August 2018).
51. Selivanova, Y. *Regulation of Energy in International Trade Law*; Kluwer Law International: The Hague, Poland, 2011; WTO, NAFTA and Energy Charter 2011.
52. Dent, C.M. Understanding the Energy Diplomacies of East Asian States. *Mod. Asian Stud.* **2013**, *47*, 935–967. [CrossRef]
53. Pogoretskyy, V.; Melnyk, S. Energy security, climate change and trade: Does the WTO provide for a viable framework for sustainable energy security? In *Research Handbook on Climate Change and Trade Law*; Delimatsis, P., Ed.; Edward Elgar: London, UK, 2016.
54. Meyer, T. Explaining Energy Disputes at the World Trade Organisation. *Int. Environ. Agreem. Politics Law Econ.* **2017**, *17*, 391–410.
55. Leal-Arcas, R. *Climate Change and International Trade*; Edward Elgar: Cheltenham, UK, 2013.
56. Morin, J.F.; Jinnah, S. The untapped potential of preferential trade agreements for climate governance. *Environ. Politics* **2018**, *27*, 541–565. [CrossRef]
57. Van Asselt, H. *The Fragmentation of Global Climate Governance: Consequences and Management of Regime Interactions*; Edward Elgar: London, UK, 2014.
58. Cottier, T.; Payosova, T. Common Concern and the Legitimacy of the WTO in Dealing with Climate Change. In *Research Handbook on Climate Change and Trade Law*; Delimatsis, P., Ed.; Edward Elgar: London, UK, 2016.
59. Brandi, C. *Trade Elements in Countries' Climate Contributions under the Paris Agreement*; ICTSD: Geneva, Switzerland, 2017.
60. Brewer, T.L. Trade Policies and Climate Change Policies: A Rapidly Expanding Joint Agenda. *World Econ.* **2010**, *33*, 799–809. [CrossRef]
61. Halvorssen, A.M. UNFCCC, the K UNFCCC, the Kyoto Protocol, and the WTO—Brewing Conflicts or Brewing Conflicts or Are They Mutually Supportive. *Denver J. Int. Law Policy* **2020**, *36*, 369–379.
62. ICTSD. *Multilateral Negotiations at the Intersection of Trade and Climate Change*; ICTSD: Geneva, Switzerland, 2012.
63. Kulovesi, K. Real or imagined controversies—A climate law perspective on the growing links between the international trade and climate change regimes. *Trade Law Dev.* **2014**, *6*, 55–92.

64. Van Asselt, H.; Kulovesi, K. Seizing the opportunity: Tackling fossil fuel subsidies under the UNFCCC. *Int. Environ. Agreem. Politics Law Econ.* **2017**, *17*, 357–370. [CrossRef]
65. Cosbey, A. *Trade and Climate Change: Issues for the G20 Agenda*; Konrad-Adenauer-Stiftung: Lima, Peru, 2018.
66. Heubaum, H.; Biermann, F. Integrating global energy and climate governance: The changing role of the International Energy Agency. *Energy Policy* **2015**, *87*, 229–239. [CrossRef]
67. United Nations Environmental Programme/UNEP. *Climate and Trade Policies in a Post-2012 World*; UNEP: Geneva, Switzerland, 2009.
68. World Bank. *International Trade and Climate Change*; World Bank: Washington, DC, USA, 2008.
69. Breinlich, H. The Economic Effects of Free Trade Agreements. In *Handbook of International Trade Agreements*; Breinlich, H., Ed.; Routledge: London, UK, 2018.
70. Hannan, S.A. The Impact of Trade Agreements: New Approach, New Insights. In *IMF Working Paper Series*; International Monetary Fund: Washington, DC, USA, 2016.
71. Baier, S.L.; Yotov, Y.V.; Zylkinc, T. On the widely differing effects of free trade agreements: Lessons from twenty years of trade integration. *J. Int. Econ.* **2019**, *116*, 206–226. [CrossRef]
72. Egger, P.H.; Larch, M.; Yotov, Y.V. Gravity-Model Estimation with Time-Interval Data: Revisiting the Impact of Free Trade Agreements. In *CESifo Working Paper Series*; Centre for Economic Studies and Ifo Institute (CESifo): Munich, Germany, 2020.
73. Head, K.; Mayer, T. Gravity equations: Workhorse, toolkit, and cookbook. In *Handbook of International Economics*; Gopinath, G., Helpman, E., Rogoff, K., Eds.; Elsevier: The Hague, Poland, 2014.
74. Ramaswamy, S.; Choutagunta, A.; Sahu, S.K. Evaluating Asian Free Trade Agreements: What Does Gravity Model Tell Us? *Foreign Trade Rev.* **2021**, *56*, 60–70. [CrossRef]
75. Yao, X.; Zhang, Y.; Yasmeen, R.; Cai, Z. The impact of preferential trade agreements on bilateral trade: A structural gravity model analysis. *PLoS ONE* **2021**, *16*, e0249118. [CrossRef]
76. Cheong, J.; Kwak, D.W.; Tang, K.K. The trade effects of tariffs and non-tariff changes of preferential trade agreements. *Econ. Model.* **2018**, *70*, 370–382. [CrossRef]
77. Hernandez, M. The Rising Importance of Non-tariff Measures and their use in Free Trade Agreements Impact Assessments. In *Global Development and Environment Institute Working Paper Series*; Tufts University: Medford, OR, USA, 2019.
78. Okabe, M. Impact of Free Trade Agreements on Trade in East Asia. In *ERIA Discussion Paper Series*; Economic Research Institute for ASEAN and East Asia: Tokyo, Japan, 2015.
79. Ciuriak, N.; Ciuriak, D. Climate Change and the Trading System: Implications of the Trans-Pacific Partnership. *Int. Trade J.* **2016**, *30*, 345–361. [CrossRef]
80. Frey, C. Mega-Regional Trade Agreements and Post-2015 Climate Protection: Bridging the Gap. *J. Eur. Environ. Plan. Law* **2015**, *12*, 264–285. [CrossRef]
81. Munro, J. Climate Change in the TPP and the TTIP. In *Research Handbook on Climate Change and Trade Law*; Delimatsis, P., Ed.; Edward Elgar: London, UK, 2016.
82. Morin, J.F.; Michaud, N.; Bialais, C. Trade negotiations and climate governance: The EU as a pioneer, but not (yet) a leader. In *IDDRI Issue Brief*; Institut du Développement Durableet des Relations Internationales (IDDRI): Paris, France, 2016.
83. Jinnah, S.; Morin, J.F. *Greening through Trade: How American Trade Policy is Linked to Environmental Protection Abroad*; MIT Press: Boston, MA, USA, 2020.
84. Crabtree, B.F.; Miller, W.L. *Doing Qualitative Research*; Sage: London, UK, 1999.
85. King, N. Using templates in the thematic analysis of text. In *Essential Guide to Qualitative Methods in Organisational Research*; Cassell, C., Symon, G., Eds.; Sage: London, UK, 2004.
86. King, N. Doing Template Analysis. In *Qualitative Organisational Research: Core Methods and Current Challenges*; Symon, G., Cassell, C., Eds.; Sage: London, UK, 2012.
87. Carter, F.W.; Turnock, D. *Environmental Problems in Eastern Europe*; Routledge: London, UK, 1996.
88. Campi, M.; Dueñas, M. Intellectual property rights, trade agreements, and international trade. *Res. Policy* **2019**, *48*, 531–545. [CrossRef]
89. Hayakawa, K.; Kim, H.S.; Yoshimi, T. Exchange rate and utilization of free trade agreements: Focus on rules of origin. *J. Int. Money Financ.* **2017**, *75*, 93–108. [CrossRef]
90. Kawai, M.; Wignaraja, G. *Asia's Free Trade Agreements: How Is Business Responding?* Asian Development Bank: Manila, Philippines, 2011.
91. Horne, C.; Mollborn, S. Norms: An Integrated Framework. *Annu. Rev. Sociol.* **2020**, *46*, 467–487. [CrossRef]
92. Finnemore, M.; Sikkink, K. International Norm Dynamics and Political Change. *Int. Organ.* **1998**, *52*, 887–917. [CrossRef]
93. Widmaier, W. The power of economic ideas–through, over and in–political time: The construction, conversion and crisis of the neoliberal order in the US and UK. *J. Eur. Public Policy* **2016**, *23*, 338–356. [CrossRef]
94. Cho, S. *The Social Foundations of World Trade: Norms, Community, and Constitution*; CUP: Cambridge, UK, 2014.
95. Sicurelli, D. The EU as a norm promoter through trade. The perceptions of Vietnamese elites. *Asia Eur. J.* **2015**, *13*, 23–39. [CrossRef]
96. Wang, Y. Power of discourse in free trade agreement negotiation. *Leiden J. Int. Law* **2019**, *32*, 437–455. [CrossRef]
97. Allee, T.; Lugg, A. Who wrote the rules for the Trans-Pacific Partnership? *Res. Politics* **2016**, *1*, 1–9. [CrossRef]
98. Parker, C.F.; Karlsson, C.; Hjerpe, M. Assessing the European Union's global climate change leadership. *J. Eur. Integr.* **2017**, *39*, 239–252. [CrossRef]

99. Jinnah, S.; Morgera, E. Environmental Provisions in American and EU Free Trade Agreements: A Preliminary Comparison and Research Agenda. *Rev. Eur. Comp. Int. Law* **2013**, *22*, 324–339. [CrossRef]
100. Commission of the European Communities (CEC). *White Paper on Growth, Competitiveness and Employment*; CEC: Brussels, Belgium, 1993.
101. Jinnah, S.; Lindsay, A. Diffusion through Issue Linkage: Environmental Norms in US Trade Agreements. *Glob. Environ. Politics* **2016**, *16*, 41–61. [CrossRef]
102. Croquet, N.A.J. The climate change norms under the EU-Korea Free Trade Agreement: Between soft and hard law. In *Global Governance through Trade: EU Policies and Approaches*; Wouters, J., Marx, A., Geraets, D., Natens, B., Eds.; Edward Elgar: London, UK, 2015.
103. Morin, J.F.; Rochette, M. Transatlantic convergence of preferential trade agreements environmental clauses. *Bus. Politics* **2017**, *19*, 621–658. [CrossRef]
104. Pirlot, A. The environmental dimension of free trade agreements: A European perspective. *Rev. Int. De Droit Économique* **2020**, *2*, 183–201.
105. Manners, I.J. Normative Power Europe: A Contradiction in Terms? *J. Common Mark. Stud.* **2002**, *40*, 235–258. [CrossRef]
106. Damro, C. Market power Europe: Exploring a dynamic conceptual framework. *J. Eur. Public Policy* **2015**, *22*, 1336–1354. [CrossRef]
107. Possenti, S. The Trade-Climate Nexus: Assessing the European Union's Institutionalist Approach. In *EU Diplomacy Paper, No. 04/2019*; College of Europe: Bruges, Belgium, 2019.
108. Rosamond, B. Three ways of speaking Europe to the world: Markets, peace, cosmopolitan duty and the EU's normative power. *Br. J. Politics Int. Relat.* **2013**, *16*, 133–148. [CrossRef]
109. Dent, C.M. *Renewable Energy in East Asia: Towards a New Developmentalism*; Routledge: London, UK, 2014.
110. Moon, T.H. Green Growth Policy in the Republic of Korea: Its Promises and Pitfalls. *Korea Obs.* **2010**, *41*, 379–414.
111. Song, A.Y. Linking trade and environment in emerging economies: Korea's ambition for making green free trade agreements. *Pac. Rev.* **2021**, *34*, 321–350. [CrossRef]
112. Siles-Brugge, G. Resisting Protectionism after the Crisis: Strategic Economic Discourse and the EU-Korea Free Trade Agreement. *New Political Econ.* **2011**, *16*, 627–653. [CrossRef]
113. Park, S.H. The new politics of trade negotiations: The case of the EU-Korea FTA. *J. Eur. Integr.* **2017**, *39*, 827–841. [CrossRef]
114. Siles-Brugge, G. The power of economic ideas: A constructivist political economy of EU trade policy. *J. Contemp. Eur. Res.* **2013**, *9*, 597–617.
115. Qian, X. Phoenix from the Ashes CPTPP Meaning for Asia-Pacific (And Global) Investment. *Asian J. WTO Int. Health Law Policy* **2020**, *15*, 567–652.