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Energy disciplines in PTAs between security and sustainability concerns: a comparative perspective

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ABSTRACT

This article aims at exploring the universe of energy disciplines included in preferential trade agreements (PTAs) and their evolution through the prisms of energy security and energy sustainability. It offers a comparative perspective by classifying relevant provisions according to their scope and coverage, their level of normativity and enforceability, and their innovative potential for driving a structural reorientation of PTAs from a security-driven approach (ie focused on the use of trade rules to promote energy trade in order to foster availability) to a sustainability-driven approach (ie focused on the use of trade rules to promote environmentally sustainable energy trade in order to facilitate the energy transition). It identifies the main tenets underpinning this ongoing shift and offers some reflections on how and to which extent environmental sustainability can be advanced through PTA disciplines on energy.

INTRODUCTION

The potential of trade and trade policy to contribute to the achievement of energy goals has long been recognized.[1] For decades, the question of availability of sufficient energy remained central in global energy governance, and made the issue of uninterrupted supply of energy (ie energy security) predominant in the trade discourse too.[2] Owing to the massive dependence on fossil fuels imports of several major players such as the European Union (EU) and the USA, in particular, earlier trade disciplines on energy focused on securing greater access to energy resources.[3] In recent years, however, energy security issues have progressively intersected with energy sustainability issues due to a growing sense of

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[1] See, among others, Y Selivanova (ed), *Regulation of Energy in International Trade Law: WTO, NAFTA and Energy Charter* (Kluwer Law International 2011); I Espa, 'Energy Export Restrictions in the WTO between Resource Nationalism and Sustainable Development' in F Seatzu, A Bonfanti and F Romanin Jacur (eds), *Natural Resources Grabbing: Erosion or Legitimate Exercise of State Sovereignty?* (Brill 2016), 361–79 and references cited therein; A Marhold, *Energy in International Trade Law: Concepts, Regulation and Changing Markets* (CUP 2021).

[2] For an excellent recollection, see J Viñuales, *The International Law of Energy* (CUP 2022), 21–9.

[3] See, eg I Espa, 'La cooperazione in materia energetica tra esigenze di sicurezza e sostenibilità' in G. Adinolfi (ed.), *Gli Accordi Internazionali di Nuova Generazione dell'Unione Europea* (Giappichelli 2021), 259–60 and references cited therein.

urgency of climate action, on the one hand,[4] and to an increasing awareness of the magnitude of greenhouse gas (GHG) emissions linked to the energy sector, on the other hand.[5] The outbreak of the war in Ukraine, and the attendant weaponization of energy trade, has further increased the need for making the trade regime instrumental to accelerating efforts towards the energy transition—and addressing the manifold challenges (infrastructural, technical, regulatory, and organizational) entailed by the scaling up of renewables in energy markets.[6]

Accordingly, the trade–climate–energy nexus has gained prominence in a number of recent initiatives pursued under the auspices of the World Trade Organization (WTO).[7] Such initiatives do signal that time is ripe for engaging in discussions on how can the WTO proactively contribute to the advancement of sustainability objectives, at least within coalitions of like-minded WTO Members.[8] Whether they will succeed in delivering concrete proposals for new energy disciplines designed to this end remains, however, uncertain at best.[9]

By contrast, preferential trade agreements (PTAs) have not only already addressed energy issues specifically, but also purported to include a progressively wider range of provisions intended to make trade disciplines on energy instrumental towards the advancement of climate action and, more generally, environmental sustainability goals.[10] While the level of ambition of such provisions greatly varies across PTAs, the inclusion of energy disciplines seems an irreversible trend—and the same applies for the endeavour to achieve *both* security and sustainability goals in PTAs of latest generation. A number of studies have already documented these trends, albeit often times implicitly (that is, in the context of broader studies on PTAs'

[4] Based on the latest report of the Intergovernmental Panel on Climate Change (IPCC), there is a more than 50 per cent probability that global temperature rise will reach or surpass 1.5 degrees Celsius between 2021 and 2040. Keeping climate change below the 1.5 degrees threshold will require deep and rapid GHG reductions, ie peaking by 2025 at the latest and a decline of 43 per cent by 2030 and 60 per cent by 2050 compared to 2019 levels: IPPC, 'Climate Change 2023: Synthesis Report of the IPCC Sixth Assessment Report' (2023) <https://www.ipcc.ch/report/ar6/syr/> accessed 20 June 2023. Based on current climate pledges (also known as nationally determined contributions or NDCs), experts found that GHG emissions are set to drop by only 7 per cent by 2030 relative to 2019 levels: T Fransen and others, 'The State of Nationally Determined Contributions: 2022' (World Resources Institute, Washington, DC 2022) <https://files.wri.org/d8/s3fs-public/2022-10/state-of-ndcs-2022.pdf?VersionId=VqrCpyQHmf5utPcHCScbqeTgU2p2SOam> accessed 20 June 2023.

[5] According to latest data published by the International Energy Agency (IEA), energy-related emissions 'grew 0.9% or 321 Mt in 2022 to a new all-time high of 36.8 Gt': IEA, 'CO_2 Emissions in 2022' (2022) <https://iea.blob.core.windows.net/assets/3c8fa115-35c4-4474-b237-1b00424c8844/CO2Emissionsin2022.pdf> accessed 20 June 2023. More generally, the energy sector has persistently constituted the single most important source of GHG emissions at the global level: WF Lamb, and others, 'A Review of Trends and Drivers of Greenhouse Gas Emissions by Sector from 1990 to 2018' (2022) 12 Environmental Research Letters 073005.

[6] For a comprehensive overview of the challenges linked to increasing shares of renewables into the grid, see T Cottier and I Espa, *International Trade in Sustainable Electricity: Regulatory Challenges in International Economic Law* (CUP 2017).

[7] These range from the Trade and Environmental Sustainability Structured Discussions (TESSD) dialogue—which focuses on a number of critically important topics at the core of the trade–energy–climate nexus, including environmental goods and services facilitation and subsidies related to the transition to a low-carbon economy (WTO doc INF/TE/SSD/W/21, 30 November 2022)—to the various initiatives aimed at tackling fossil fuel subsidies, including the Fossil Fuel Subsidy Reform (FFSR) initiative: H Asmelash, 'The Regulation of Environmentally Harmful Fossil Fuel Subsidies: From Obscurity to Prominence in the Multilateral Trading System' (2022) 33 European Journal of International Law 993.

[8] One concrete example of the momentum reached is the recent adoption of the new WTO Agreement on Fisheries Subsidies at the 12th Ministerial Conference (MC12) on 17 June 2022. This Agreement has been presented as the first WTO Agreement with 'environmental sustainability at its core': A Gonzalez, 'WTO going Green' (WTO Blog Trade Thoughts, from Geneva, 19 December 2022) <https://www.wto.org/english/blogs_e/ddg_anabel_gonzalez_e/blog_ag_19dec22_e.htm> accessed 20 June 2022.

[9] WTO rules apply to energy goods and services just as they apply to any other good or service, but they were not drafted having energy (and the peculiarities of the sector, including its crucial role for climate change action) in mind: G Marceau, 'The WTO in the Emerging Energy Governance Debate' in J Pauwelyn (ed), *Global Challenges at the Intersection of Trade, Energy and the Environment* (Centre for Trade and Economic Integration 2009), 25; T Cottier and others, 'Energy in WTO Law and Policy' in T Cottier and P Delimatsis (eds), *The Prospects of International Trade Regulation: From Fragmentation to Coherence* (CUP 2011), 210–44.

[10] See, eg CM Dent, 'Trade, Climate and Energy: A New Study on Climate Action through Free Trade Agreements' (2021) 14 Energies 4363; E Cima, 'Promoting Renewable Energy Through FTAs? The Legal Implications of a New Generation of Trade Agreements' (2018) 52 Journal of World Trade 663.

contribution to sustainable development and/or environmental protection)[11] or via focusing on PTAs disciplines targeting specific sectors (eg renewable energy)[12] or goals (eg climate action).[13] There remains, however, comparatively little legal scholarly analysis on the full range of energy disciplines included in PTAs and their evolution, and on what these say about the state of the structural reorientation of PTAs from a security-driven approach (ie focused on the use of trade rules to promote energy trade in order to foster availability) to a sustainability-driven approach (ie focused on the use of trade rules to promote *environmentally sustainable* energy trade in order to facilitate the energy transition).[14] The goal of this article is therefore to investigate whether and, if so, to what extent PTAs' architecture in this domain has shifted from a 'competition among purposes' framework—where availability and security of energy are prioritized over sustainability considerations so that the transition to a low-carbon energy matrix is mainly appreciated for its diversification potential—towards a model that is firmly anchored in the primacy of sustainability as *the* main overarching goal of energy (trade) governance, complemented by a number of (security-informed) intermediate goals such as diversification and efficiency.[15]

Against this backdrop, this article aims at exploring the universe of energy disciplines included in PTAs with regard to both dimensions (ie energy security and energy sustainability) with a view to illustrate common traits and main differences as well as to identify main areas of innovation and most notable shortcomings, particularly from a sustainability perspective.[16] To this end, Section 'Energy disciplines in PTAs: in search for a balance between security and sustainability concerns' provides an overview of the interplay between energy security and energy sustainability considerations in PTAs, with a focus on PTAs of latest generation. Section 'Energy security in PTAs of latest generation' zooms in on energy security-driven provisions and develops a classification that takes into account their material scope, their level of normativity, and their level of enforceability. A similar approach is followed in Section 'Energy sustainability in PTAs of latest generation' with regard to energy sustainability-driven provisions. Based on such comparative analysis, Section 'Concluding remarks' identifies lights and shades in the approaches adopted to address the tension between energy security and sustainability concerns in PTAs and concludes by offering a few reflections on whether and to which extent the very architecture of PTAs has sufficiently evolved to structurally

[11] See MC Cordonier Segger, *Crafting Trade and Investment Accords for Sustainable Development* (CUP 2021); E Blot and M Kettunen, *Environmental Credentials of EU Trade Policy: A Comparative Analysis of EU Free Trade Agreements* (Institute for European Environmental Policy 2021); S Jinnah and E Morgera, *Greening Through Trade: How American Trade Policy Has Promoted Environmental Protection Abroad* (MIT Press 2020); JF Morin, A Dür and L Lechner, 'Mapping the Trade and Environment Nexus: Insight from a New Data Set' 18 Global Environmental Politics 122 (2018).

[12] Cima (n 10); I Espa and G Marín Durán, 'Promoting Green Energy through EU Preferential Trade Agreements: Potential and Limitations' (2020) 47 Legal Issues of Economic Integration 115.

[13] R Leal-Arcas, 'Climate Change Mitigation from the Bottom Up: Preferential Trade Agreements to Promote Climate Change Mitigation' (2013) 7 Carbon and Climate Law Review 34; MW Gehring and others, *Climate Change and Sustainable Energy Measures in Regional Trade Agreements (RTAs). An Overview* (ICTSD Issue Paper No 3, Geneva 2013).

[14] The author engaged with this question (Espa n 3), but with specific reference to EU PTAs only.

[15] The expression 'competition among purposes' refers to the multiple—partially overlapping, at times conflicting—purposes of energy governance and is borrowed from Jorge Viñuales (n 2) 28–9.

[16] This analysis is based on the survey of over 160 PTAs available as of 30 June 2023 and signed over the last 30 years (including those that have not yet entered into force), which incorporate energy disciplines fitting into the developed taxonomy. This sample includes the agreements negotiated by leading actors in the global landscape of PTAs such as the EU and the USA, major energy players including the Russian Federation and China, and recent mega-regionals such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), the Regional Comprehensive Economic Partnership (RCEP), and the African Continental Free Trade Area (AfCFTA). Overall, the selected agreements are widely representative of all three main models of PTAs, that is, the EU model, the NAFTA model, and the Southern model: see, among others, L Baccini, A Dür and YZ Haftel, 'Imitation and Innovation in International Governance: The Diffusion of Trade Agreement Design' in A Dür and M Elsig (eds), *Trade Cooperation: The Purpose, Design and Effects of Preferential Trade Agreement* (CUP 2015), 167–91. The selected sample also captures most recent agreements negotiated by main hubs in the PTAs space, such as the USMCA, and the most recent agreements incorporating significant innovations on the energy sustainability side, including the PTAs negotiated by New Zealand, the UK, and open plurilaterals such as the Agreement on Climate Change, Trade and Sustainability (ACCTS).

accommodate for the primacy of environmental sustainability through PTA disciplines on energy.

ENERGY DISCIPLINES IN PTAS: IN SEARCH FOR A BALANCE BETWEEN SECURITY AND SUSTAINABILITY CONCERNS

Energy provisions in dedicated chapters: the prevalence of energy security concerns

Energy disciplines have not always been included in PTAs. The first example of a PTA addressing energy issues in preferential trade agreements is the 1992 North American Free Trade Agreement (NAFTA) between the USA, Canada, and Mexico.[17] For a long time, NAFTA remained the only PTA equipped with a separate chapter specifically targeting energy (Chapter 6 on 'Energy and Basic Petrochemicals'). The special circumstances leading to the conclusion of this first energy-specific chapter relate to the status of the USA as a major energy importer at the time of the negotiations, which led it to seek greater access to Canada's and Mexico's supplies.[18] Not surprisingly, the chapter exclusively focused on energy security.

Along with the prohibition of quantitative restrictions on importation and exportation, the chapter sought to enhance energy security through WTO-plus provisions prescribing the prohibition of dual pricing practices and limiting the use of export taxes,[19] as well as via imposing stricter conditions for the use of export restrictions under the exceptions available under the GATT for critical shortage of supply situations (Article XI:2(a)), conservation purposes (Article XX (g)), and for the purposes of ensuring sufficient domestic supplies (Article XX (i) and (j)) and national security (Article XXI).[20] Under the so-called energy proportionality rule, in particular, the use of export restrictions on energy goods could not result in a reduction of the proportion of exports relative to the total supply of the restricted good as compared to the previous three years;[21] Article 605(2) imposed furthermore a supply commitment according to which export restrictions could not lead to higher export prices due to licenses, fees, taxation, and minimum price requirements (that is, a de facto equal access clause for supplies);[22] more generally, the use of exceptions could not result in a disruption of normal channels of supply from one NAFTA party to another NAFTA party—although in practice these provisions only applied between Canada and the United States due to Mexico's extensive reservations.[23]

Importantly, all the provisions included in the NAFTA energy chapter applied to measures relating to energy goods and to measures relating to investment and to cross-border trade in services associated with such goods.[24] The targeted energy goods, however, only included conventional energy resources such as diesel, gasoline, natural gas, and electricity, but not biofuels or energy-related equipment used for renewable energy generation.[25] The energy security dimension of the chapter was therefore dominant and attested by the over-

[17] North American Free Trade Agreement (entered into force 1 January 1994) 1867 UNTS 14.

[18] KJ Benes, *Considerations for the Treatment of Energy in the US-EU Transatlantic Trade and Investment Partnership* (Columbia/SIPA Center on Global Energy Policy, September 2015), 11–12.

[19] NAFTA, arts 603–604. For a comment, see I Espa and K Holzer, 'Negotiating an Energy Deal Under TTIP: Drivers and Impediments to US Shale Exports to Europe' (2015) 43 Denver Journal of International Law and Policy 357, 362–3.

[20] NAFTA, arts 605 and 607. For an overview of the requirements imposed by such exceptions under the GATT and an illustration of how they were interpreted in WTO case law, see, among others, I Espa, *Export Restrictions on Critical Minerals and Metals: Testing the Adequacy of WTO Disciplines* (CUP 2015), 208–23 and references cited therein.

[21] NAFTA, art 605(a).

[22] NAFTA, art 605(b). Marhold (n 1) 144 and R Herran and P Poretti, 'Energy Trade and Investment under the North American Free Trade Agreement' in Selivanova (n 1) 401.

[23] Having the government monopoly in the energy sector, Mexico managed to pull itself out of most of the obligations related to energy: Espa and Holzer (n 19) 363. See also Herran and Poretti (n 22) 358–64.

[24] NAFTA, art 602(1).

[25] NAFTA art 602(2) expressly defined the energy and petrochemical goods covered under the chapter by listing their relevant Harmonized System (HS) codes. Listed goods remained also subject to general rules on trade and investment under the Agreement: G Horlick and others, 'NAFTA Provisions and the Electricity Sector', Background paper prepared for the Commission for Environmental Cooperation Secretariat, Montreal, Canada, 2002, 29.

arching principles of the chapter as explicitly stated under Article 601, that is, to increase trade in energy resources and basic petrochemicals and to strengthen 'viable and international competitive energy and petrochemicals sectors'.[26] There was no provision addressing, even incidentally, the importance of targeting environmentally sustainable energy trade in the NAFTA.

By contrast, energy sustainability concerns have progressively been addressed by an increasing number of PTAs. This trend emerged timidly in the case of those PTAs that, taking inspiration from NAFTA, have included energy-specific chapters or chapters seeking to regulate more broadly the issue of access to both energy and non-energy supplies.[27] It however rapidly expanded in latest years with a view to address the sustainability dimension of energy trade in and of itself, that is, irrespective of the potential of renewable sources of energy to become a means to accommodate for the security-driven need for diversification of energy supplies.[28]

With regard to the former trend, the inclusion of energy-specific/related chapters has become quite common in EU PTAs[29]—from the earlier Associations Agreements (AA) concluded by the EU with countries such as Georgia, Moldavia and Ukraine[30] to the latest agreements negotiated and/or still under (re)negotiation with numerous countries including Mexico, Chile, Australia, New Zealand, the UK, India, Indonesia, and Kazakhstan.[31] In either case, the disciplines included in such chapters are strongly geared towards energy security issues and mainly focus—albeit with variations in terms of exact scope and level of ambition—on three axes: (i) access to energy (and non-energy) commodities aspects, which are aimed at securing greater access to supplies via, inter alia, the prohibition of border measures (tariffs and quantitative restrictions on import and export), dual pricing practices, and/or import and export monopolies;[32] (ii) access to energy transport infrastructure (electricity and gas infrastructure) aspects, with particular reference to third-party access provisions; and, (iii) organization of markets aspects, which are aimed at achieving competitive, secure, transparent, and non-discriminatory conditions for the purposes of promoting effective competition and the efficient functioning of the energy markets (eg through disciplines on domestic-regulated prices).[33] This trend is not

[26] NAFTA, art 601(2)–(3).

[27] For more details, see below, Section 'Energy security in PTAs of latest generation'.

[28] For more details, see below, Section 'Energy sustainability in PTAs of latest generation'.

[29] An energy-specific chapter is also included in the Treaty on the Eurasian Economic Union (EEU) between the Republic of Belarus, the Republic of Kazakhstan and the Russian Federation, Armenia and the Kyrgyz Republic: see s XX, arts 79–85. The chapter focuses on conventional energy resources and is exclusively geared towards energy security issues for the purposes of creating the enabling conditions for the creation of a common energy market.

[30] Such agreements typically include a 'Trade-Related Energy' chapter. See eg Chapter 11 of the Association Agreement Between the European Union and Its Member States, of the One Part, and Ukraine, of the Other Part [EU–Ukraine AA], signed 27 June 2014, OJ [2014] L161/3. For more details, see below, Section 'Energy security in PTAs of latest generation'.

[31] Such agreements typically include a chapter on 'Energy and Raw Materials': see, eg Chapter 5 of the Agreement Amending the Association Agreement Between the European Union and Its Member States, of the One Part, and Mexico, of the Other Part [EU–Mexico AA], agreed in principle on 21 April 2018, <https://trade.ec.europa.eu/doclib/press/index.cfm?id=1833> accessed 20 June 2023. An overview of the state of the negotiations and the text of the relevant chapters, as they stand, are available at European Commission, 'Negotiations and Agreements' <https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/negotiations-and-agreements_en> accessed 20 June 2023. In the case of the Trade and Cooperation Agreement (TCA) between the EU and the UK (entered into force since 2021), there is a specific title (Title VIII) on 'Energy', which also includes a specific chapter (Chapter 4) on 'Energy Goods and Raw Materials': Agreement between the European Union and the European Atomic Energy Community, of the one part, and the United Kingdom of Great Britain and Northern Ireland, of the other part [EU–UK TCA], signed 30 December 2020, OJ [2021] L149/10.

[32] These chapters normally include an article that provides all the 'Definitions' relevant to defining the contours of the disciplines applicable to 'energy goods' and 'raw materials'—and, in some cases (eg in the EU–New Zealand FTA) also to 'petrochemicals'. Such article either directly lists the HS codes implicated in the definition of 'energy goods' and 'raw materials' covered under the chapter or refers to an Annex including the list of relevant HS codes: see, eg EU–Mexico AA, art 5.2 and EU–New Zealand FTA, art 13.3 (referring to Annex 13).

[33] Provisions along the three axes, albeit much less specific, are also included in the EEU Treaty: see below, Section 'Energy security in PTAs of latest generation'.

surprising, given the EU's heavy dependence on the importation of energy resources (and other raw materials).[34]

At the same time, it is similarly not surprising, considering the EU's long-standing efforts to champion climate change action,[35] to observe a clear trend of progressive integration of energy sustainability considerations into energy security provisions included in such chapters. Here again, there is no single template—and levels of normativity and enforceability may differ—but, in general, the negotiated provisions have been incorporated along all three axes with the main general goal of ensuring that more energy security does not lead to detrimental environmental outcomes. This may include, eg requiring that offshore oil and gas exploration and production activities respect high standards for safety and environmental protection (first axis),[36] or that energy markets be operated to achieve, inter alia, environmentally sustainable conditions (third axis),[37] or, more generally, providing for cooperation on infrastructural developments, including for the purposes of facilitating the integration of renewables into the grid (second axis).[38] While these developments attest to the emerging awareness of the need to address the negative environmental externalities implicated by increased (conventional) energy trade, they do not yet move from the assumption that energy disciplines in PTAs should be anchored in a model of energy governance granting primacy to sustainability over security considerations.

Tackling energy sustainability concerns: the evolution of disciplines in PTAs and beyond

EU PTAs remain special in the way they deal with energy security issues through targeted chapters structured along the three axes, and with progressively more intense efforts to incorporate sustainability considerations into them all. At the same time, however, other PTAs also exhibit a particular attention towards the need to reconcile energy security and sustainability concerns. Again not surprisingly, this is the case of the recently concluded United States-Mexico-Canada Free Trade Agreement (USMCA)[39]—even if it ultimately did not include, following Mexico's request, an energy-specific chapter, which was substituted with a Side Letter issued by the USA and Canada.[40] The Side Letter focuses on energy regulatory measures and regulatory transparency with a view to strengthen the integration of North American energy markets (third axis);[41] it also explicitly deals with access to electric transmission facilities and pipeline networks aspects (second axis),[42] which were absent in the NAFTA.[43] First axis aspects are not

[34] The EU has most recently accelerated efforts towards achieving what it calls 'strategic autonomy': I Espa, 'Green Industrial Policy and International Trade' (Remaking The Global Trading System for a Sustainable Future Project White Paper, May 2023) <https://remakingtradeproject.org/white-papers> accessed 20 June 2023.

[35] I Espa, 'Promoting Renewables in the Energy Union: Current Strategies and the Challenges Ahead' (2017) 2 European Investment Law and Arbitration Review 225 and references cited therein and I Espa, J Francois and H van Asselt, 'The EU Proposal for a Carbon Border Adjustment Mechanism (CBAM): An Analysis under WTO and Climate Change Law' (2022) 20 Oil, Gas and Energy Law 1, 7–10 and reference cited therein.

[36] See, eg EU–New Zealand FTA, art 13.9. For more details, see section 'Provisions governing access to energy supplies' further.

[37] See, eg EU–Georgia AA, art 216(1). For more details, see section 'Provisions governing the organization of energy markets' further.

[38] See, eg EU–Ukraine AA, art 274 and EU–Mexico AA, art 5.10. For more details, see section 'Provisions governing access to energy infrastructure' further.

[39] Energy security is also indirectly accommodated in the 2020 US–China Phase One Economic and Trade Agreement, which includes a specific provision on 'Trade Opportunities' envisaging increasingly higher minimum thresholds of purchases and imports of, inter alia, energy products into China from the USA (art 6.2). This is however a special case considering that the agreement was negotiated in the context of the US–China trade war. Article 6.2 is part of the 'Expanding Trade' chapter, which neither deals with energy separately nor it purports to tackle energy security and/or sustainability concerns specifically. In fact, carbon-intensive energy exports (ie coal exports) have grown considerably since the entry into force of the Agreement: C Bown, 'US-China Phase One Tracker: China's Purchases of US Goods, Peterson Institute for International Economics' 19 July 2022 <https://www.piie.com/research/piie-charts/us-china-phase-one-tracker-chinas-purchases-us-goods> accessed 20 June 2023.

[40] JM Weekes and others, 'NAFTA 2.0 Drilling Down: The Impact of the CUSMA/USMCA on Canadian Energy Stakeholders' (2019) 7 Energy Regulation Quarterly, para 5.

[41] Government of Canada, 'Annex: Energy Regulatory Measures and Regulatory Transparency to the Canada-U.S.-Mexico Agreement' [hereinafter US-Canada Side Letter on Energy] (Letter on 30 November 2018) <https://international.gc.ca/trade-commerce/assets/pdfs/agreements-accords/cusma-aceum/letter-energy.pdf> accessed 20 June 2023, art 4.

[42] US–Canada Side Letter on Energy, art 5. Withing the general USMCA, the movement of hydrocarbons through pipelines has been improved with new product specific rules of origin on mineral fuels (see Annex 4-B, Ch 27, note 4).

[43] Espa and Holzer (n 19) 363.

addressed in the side letter, but provisions relevant to trade in energy goods and energy-related activities are spread over different chapters in the agreement, including the national treatment and market access,[44] rules of origin, customs and trade facilitation, cross-border trade in services, and investment chapters.[45] Importantly, however, the jettison of the energy chapter has inherent implications for sustainability prospects of North American trade in energy: leaving out the energy proportionality rule, in particular, means that Canada does not longer have to keep up with oil and gas extraction for the purposes of exporting high volumes to the USA—which in turn increases Canada's ability to mitigate its greenhouse gas (GHG) emissions in line with its Paris Agreement's commitments.[46] This goes on top of a number of provisions that more explicitly tackle the energy sustainability dimension that are included in the chapter on 'Environment' of the Agreement and in its Environmental Cooperation Agreement.[47]

More generally, energy sustainability considerations have systematically been addressed—again, with different levels of ambition—in PTAs negotiated by a wide range of actors, from the European Union to New Zealand, from China to EFTA States, from Chile to the UK, from Singapore to Canada. The common thread to such disciplines is the creation of an enabling environment for the deployment of renewable energy and energy-efficient technologies, that is, disciplines that prioritize the sustainability dimension of energy trade over its potential for increasing availability prospects. Accordingly, PTAs of latest generation have contributed to promoting energy sustainability as a vehicle of climate action through two main channels: (i) provisions aimed at tackling tariffs and non-tariff barriers affecting trade and investment in environmental goods and services, with particular reference to sustainable renewable energy goods and related services and energy-efficient products and services; and (ii) subsidies disciplines aimed at reserving some policy space for renewable energy support programmes and, more generally, green subsidies related to the transition to a low-carbon economy, on the one hand, and/or at committing State Parties to fossil fuel subsidy reform, on the other hand.[48] The level of detail can vary significantly (eg most PTAs include provisions on the importance to facilitate and promote trade in environmental goods, but only a few require that all tariffs on listed

[44] The applicability of the national treatment principle was already explicitly acknowledged in the NAFTA chapter on 'Energy and Basic Petrochemicals': Article 606(1)(a). See also Marhold (n 1) 143.

[45] Importantly, this means that Mexico remains subject to such provisions. Indeed, a first request for dispute settlement consultations with Mexico under the USMCA was filed by the USA in July 2022: See Office of the US Trade Representative, 'United States Requests Consultations Under the USMCA Over Mexico's Energy Policies' <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2022/july/united-states-requests-consultations-under-usmca-over-mexicos-energy-policies> accessed 20 June 2023.

[46] N Laurens and others, 'NAFTA 2.0: The Greenest Trade Agreement Ever?' (2019) 18 World Trade Review 659, 672 and references cited therein.

[47] As to the former, see, eg art 24.24 on the promotion of environmental goods and services; as to the latter, see art 9(m) mandating the Commission for Environmental Cooperation's Council to work on cooperative activities relating to reducing emissions, including developing low emissions technologies and 'all clean, efficient energy sources that enhance energy security'. For more details, see below, Section 'Energy sustainability in PTAs of latest generation'.

[48] Irrespective of the importance of green public procurement to accelerate the energy transition (see, eg RD Anderson and others, 'Deploying the WTO Agreement on Government Procurement (GPA) to Enhance Sustainability and Accelerate Climate Change Mitigation' (2023) 32 Public Procurement Law Review 223, 224), PTAs have generally not been including energy-specific/relevant disciplines targeting public procurement. This may seem striking at a first glance, especially if one considers that PTAs of latest generation have systematically incorporated procurement chapters. However, a possible explanation could be the strong political incentive for governments to purchase locally produced goods and services to foster green industries domestically through public money (see, eg SJ Rickard, 'PTAs and Public Procurement' in Dür and Elsig (n 18) 281–6), particularly in those cases where infrastructural challenges may already limit trade opportunities (eg in the case of electricity, whose market is still for most part geographically circumscribed, when not predominantly local: I Espa and G Marín Durán, 'Renewable Energy Subsidies and WTO Law: Time to Rethink the Case for Reform Beyond Canada – Renewable Energy/FIT Program' (2018) 21 Journal of International Economic Law 621, 625–8). Exception to this trend include (i) the ASEAN–Australia–New Zealand Free Trade Agreement (AANZFTA), which after the conclusion of the Second Protocol in 2013 includes a chapter on Government Procurement, where Parties commit inter alia to 'endeavour to incorporate environmentally sustainable procurement policies and practices to the extent possible and as appropriate' (Chapter 17, art 6); and (ii) the UK–New Zealand FTA, where Parties recognize that 'environmental considerations may be taken into account at any stage of a procurement, provided they are non-discriminatory and are indicated in the notice of intended procurement or tender documentation', including for the purposes of taking appropriate measures to ensure compliance with environmental obligations such as, but not limited to, those arising under the Environment Chapter (art 16.10).

environmental goods are eliminated upon entry into force), and the same applies to the level of enforceability (eg provisions included in 'Trade and Sustainable Development Chapters' in most EU FTAs are vested in hortatory language and not subject to standard dispute settlement procedures).[49]

Although exact formulations differ, the inclusion of PTA provisions addressing energy sustainability concerns seems an irreversible trend.[50] The ambition to tackle the trade–energy–climate nexus more effectively has also led to recent experimentations in the context of the negotiation of 'non-traditional' trade agreements such as the Australia–Singapore Green Economy Agreement or open plurilaterals such as the Agreement on Climate Change, Trade and Sustainability (ACCTS) between New Zealand, Costa Rica, Fiji, and Switzerland.[51] Both agreements aim at bringing the disciplines on the facilitation of trade and investment in environmental goods and services one step further.[52] The former, furthermore, includes innovative disciplines in the area of 'Clean Energy, Decarbonisation and Technology' with a view to expand cooperation on areas such as cross-border electricity trade, sustainable transport, hydrogen, carbon capture and storage, and renewable energy trade.[53] The latter will include specific disciplines on harmful fossil fuel subsidies building on New Zealand's leadership in the context of, among others, the Friends of Fossil Fuel Subsidy Reform (FFFSR) initiative.[54] Although such agreements remain sparse at the moment, the traction gained by non-traditional models exemplifies how high is the momentum for experimenting new, innovative solutions to address trade–energy–climate nexus concerns.

ENERGY SECURITY IN PTAS OF LATEST GENERATION

As explained above, energy security concerns have mainly been tackled in dedicated chapters in EU PTAs and, to a lesser extent, through energy-specific provisions in the USMCA.[55] Such provisions are not primarily informed by the logic of promoting more environmentally sustainable trade in energy, but latest agreements do attempt at incorporating sustainability considerations into energy security-driven provisions.

Provisions governing access to energy supplies

An increasing number of PTAs of latest generation include provisions that are primarily aimed at securing greater access to energy supplies in the context of energy-specific chapters or chapters seeking to regulate more broadly the issue of access to both energy and non-energy supplies for security purposes.[56] Such provisions target most notably trade in conventional energy resources (and raw materials) and therefore only deal with sustainability considerations complementarily, that is, with a view to address the negative environmental externalities entailed by increased access to energy (and non-energy) supplies.

[49] For more details, see below, Section 'Energy sustainability in PTAs of latest generation'.

[50] Espa (n 3) 282–3. See also Dent (n 10), and Cima (n 10) 693–5.

[51] The official text of the 2022 Australia–Singapore Green Economy Agreement <https://www.dfat.gov.au/geo/singapore/singapore-australia-green-economy-agreement/singapore-australia-green-economy-agreement-text> accessed 20 June 2023. Information on the state of the AACTS negotiations <https://www.mfat.govt.nz/en/trade/free-trade-agreements/trade-and-climate/agreement-on-climate-change-trade-and-sustainability-accts-negotiations/> accessed 20 June 2023.

[52] See, eg Australia–Singapore Green Economy Agreement, para 9(a)(vi)(c).

[53] ibid para 9(e).

[54] For an overview of the various initiatives aimed at tackling fossil fuel subsidies within and beyond the World Trade Organization, see Asmelash (n 7).

[55] Other agreements tackle this dimension only superficially by means of programmatic provisions targeting cooperation opportunities in the energy sector. For instance, the 2015 China–Korea FTA requires that the Parties promote cooperation in the field of energy, including between public and private sectors of the Parties, as a means of 'building a stronger, more stable, and mutually beneficial partnership in the field of energy and resources' (art 17.18).

[56] This includes both 'Trade-Related Energy' chapters (see, eg EU–Ukraine AA, Chapter 11) and 'Energy and Raw Materials' chapters (see, eg EU–New Zealand FTA, Chapter 13).

While there is no common model, the types of recurring provisions can be found in different combinations, reflecting a number of variables that include the level of integration sought among the Parties, the resource endowments of the partners, and the intensity and composition of energy trade among the Parties.[57] Generally speaking, there are two main clusters of provisions. On the one hand, there are provisions aimed at disciplining access to and exercise of the activities of exploration and production of energy goods. On the other hand, there are provisions aimed at prohibiting the use of border measures (tariffs, quantitative restrictions on import and export, and all measures having equivalent effect), dual pricing practices, and/or import or export monopolies. When incorporated into 'Energy and Raw Materials' chapters, both clusters of provisions are envisaged to apply to the energy goods and to the raw materials listed under the chapter without distinction. Both clusters are furthermore subject to the PTA's standard dispute settlement procedures.[58]

As to the former, a vast majority of the chapters start by clarifying that Parties retain the sovereign right to determine whether areas within their territory, as well as in their archipelagic and territorial waters, exclusive economic zone and continental shelf, are available for exploring for and producing energy goods (and raw materials).[59] Whenever an area is made available for the exercise of these activities, however, the agreements require that each Party ensures that the regime for granting an authorization to explore for and produce energy goods (and raw materials) be administered through public, transparent, and inclusive procedures.[60] Latest PTAs also accommodate for sustainability-related concerns to the extent that they require that (i) an environmental impact assessment be carried out prior to the granting of authorizations;[61] and (ii) offshore, exploration, and production of oil and gas activities be conducted based on high standards of safety and environmental protection with a view to 'protect the marine environment and coastal communities against pollution'.[62]

As to the latter aspect, the most frequently included provisions concern the prohibition of dual pricing practices[63] and the prohibition of import and export monopolies.[64] After the NAFTA was replaced with the USMCA, the EU–Ukraine AA remained the only Agreement that contains an energy-specific provision aimed at prohibiting customs duties, including custom duties of a fiscal nature, and quantitative restrictions on the import and export and all measures having equivalent effect[65]—even though most agreements include provisions on cooperation for the purposes of promoting, inter alia, the reduction of trade and investment distorting measures affecting access to energy goods (and raw materials).[66] At any rate, the use of restrictive

[57] Espa (n 3) 262.

[58] This includes both 'Trade-Related Energy' chapters (see, eg EU–Ukraine AA, art 304) and 'Energy and Raw Materials' chapters (see, eg EU–New Zealand FTA, art 26.2(1)). For a complete overview, see Espa (n 3) 267.

[59] See, eg EU–Ukraine AA, art 279(1)–(2); EU–Mexico AA, art 5.1(1); EU–New Zealand FTA, art 13.2(1); EU–Chile FTA, art 8.2(1). Similar provisions can be found in the EU textual proposals for an 'Energy and Raw Materials' chapter in the FTA with Australia, India and Tunisia, among others. In a similar vein, the USMCA includes Chapter 8 on 'Recognition of the United Mexican States' Direct, Inalienable and Imprescriptible Ownership of Hydrocarbons'.

[60] See, eg EU–UK TCA, art 327; Canada–US Side Letter on Energy, art 4. A few agreements go as far as requiring Parties that entities are treated on an equal basis as regards access to and exercise of these activities (see, eg EU–Ukraine AA, art 279(3); EU–Kazakhstan Enhanced Partnership and Cooperation Agreement, art 141), whereas most FTAs envisage a number of exceptions: see eg EU–New Zealand FTA, art 13.7; EU–Chile FTA, art 8.7(3); EU–Mexico AA, art 5.6(1)(a).

[61] See, eg, EU–New Zealand FTA, art 13.8 and EU–Chile FTA, art 8.8. See also art 8 of the EU textual proposals for 'Energy and Raw Materials' chapter in the EU–Australia FTA and the EU–India FTA.

[62] See, eg EU–New Zealand, art 13.9 and EU–UK TCA, art 322. See also art 9 of the EU textual proposals for 'Energy and Raw Materials' chapter in the EU–Australia FTA and the EU–India FTA.

[63] See, among others, EU–Ukraine AA, art 270 (1); EU–Moldova AA, art 347(1); EU–UK TCA, art 325; EU–Mexico AA, art 5.4; EU–New Zealand, art 13.5; EU–Chile FTA, art 8.5; EU–Australia FTA. See also art 5 of the EU textual proposals for 'Energy and Raw Materials' chapter in the EU–Australia FTA and the EU–India FTA.

[64] See, among others, EU–Mexico AA, art 5.3; EU–New Zealand, art 13.4; EU–Chile, art 8.4. See also the EU textual proposal for an 'Energy and Raw Materials' chapter in the EU–Australia FTA (art 4), EU–India FTA (art 4), and EU–Indonesia FTA (art 1). By contrast, under Annex 3 of the EU-MERCOSUR FTA, Uruguay and Brazil reserved their right to maintain or designate import and export monopolies in the sectors of, inter alia, petroleum, gas, and other hydrocarbons.

[65] EU–Ukraine AA, art 271(1). See, however, arts 73–74 of the EEU Treaty.

[66] See, eg EU–New Zealand FTA, art 13.14; EU–Mexico AA, art 5.10; EU–Chile FTA, art 8.15.

border measures remains captured by basic PTA rules on market access. Importantly, this means that the use of border restrictions would be subject to standard exceptions available for public health protection, conservation and, more generally, 'environmental protection' purposes, as allowed under Article XX GATT-like provisions included in PTAs, and to the standard dispute settlement procedures established under the agreements.

Provisions governing access to energy infrastructure

Access to energy infrastructure is another central pillar of energy-specific chapters dealing with energy security. It consists of two main clusters of provisions, which are again addressed in detail only in EU PTAs so far.[67] The first cluster relates to the disciplines on transit; the second cluster includes provisions on third-party access to fixed infrastructure (gas pipelines and electricity grids).

With regard to the former, it is frequent that energy chapters include a provision that explicitly incorporates the principle of freedom of transit as per Article V GATT and Article 7 of the Energy Charter Treaty.[68] In certain cases, the Parties also agree to take all necessary measures to prohibit, and to minimize the risk of, interruption, reduction or stoppage, or the unauthorized taking of energy goods in transit or transported through their territory.[69]

With regard to the latter, the standard provision requires on Parties to implement a system of third-party access to their transmission and distribution networks based on published tariffs and capacity allocation procedures that are objective, reasonable, and transparent and that do not discriminate on the basis of origin, ownership, or destination of the electricity or gas.[70] More advanced models, however, also contain specific disciplines on third-party access for producers of renewable electricity, according to which they shall ensure access to the electricity transmission and distribution infrastructure on non-discriminatory, reasonable, and cost-reflective terms within a reasonable period of time after the request for access has been submitted and under conditions that allow reliable use of that infrastructure.[71] In such cases, Parties are also requested to ensure that owners or operators of electricity transmission infrastructure take appropriate measures to minimize the curtailment of renewable electricity production, also via balancing markets.[72] This is without prejudice to the right of each Party to introduce or maintain a limited list of derogations from the right to third-party access based on objective criteria, provided that they are necessary to fulfil a legitimate policy objective, such as the need to maintain the stability of the electricity system.[73]

Access to energy infrastructure aspects is also dealt with under the US-Canada Side Letter on Energy to the USMCA, albeit much less in detail as compared to EU PTAs.[74] Article 5, in particular, requires on each Party to ensure that (i) access to or use of electric transmission facilities and pipeline networks for the purposes of importation is 'neither unduly discriminatory

[67] Espa (n 3) 265–6.

[68] This includes the agreements concluded by the EU with geographically proximate countries, eg the Association Agreements with Ukraine (art 272), Georgia (art 211), and Moldavia (art 348), but also more recently negotiated agreements with Chile (art 8.8), and Kazakhstan (art 143).

[69] See, eg the Association Agreements with Ukraine (arts 275–6), Georgia (arts 212–4), and Moldavia (arts 350–352). See also EU–Chile FTA (art 8.9), EU–Kazakhstan FTA (art 144), and EU–Tunisia FTA (art 11 of the EU textual proposal for a chapter on 'Energy and Raw Materials').

[70] See, eg EU–Ukraine AA (art 273), EU–Georgia AA (art 217), EU–Moldavia AA (art 349), EU–Chile FTA (art 8.10), EU–Mexico AA (art 5.7), EU–New Zealand (art 13.10), and EU–UK TCA (art 306). See also the EU textual proposals for an 'Energy and Raw Materials' chapter in EU–Australia FTA (art 7), and EU–Indonesia FTA (art 3). See also the EEU Treaty, arts 82–83.

[71] See, eg EU–UK TCA, art 306(2) and EU–New Zealand FTA, art 13.10(1). A few medium ambition PTAs contain third party access provisions that do not go as far as to explicitly provide for specific disciplines for producers of renewable energy, but still prescribe that access to and use of energy transport infrastructure do not discriminate between types of energy: see, eg EU–Chile FTA, art 8.10(3) and EU–Mexico AA, art 5.7(3).

[72] See, eg EU–New Zealand FTA, art 13.10(2)–(3).

[73] See, eg EU–New Zealand FTA, art 13.10(4); EU–Mexico AA, art 5.7(2); EU–Chile PTA, art 8.10(2); EU–UK TCA, art 306(2).

[74] Canada–US Side Letter on Energy, art 5 on 'Access to Electric Transmission Facilities and Pipeline Networks'.

nor unduly preferential';[75] and, (ii) any 'tolls, rates, or charges payable for that access are just, reasonable, and neither unduly discriminatory nor unduly preferential'.[76] Such disciplines are relatively unsubstantiated, and agnostic with regard to sustainability considerations; yet, they still represent a step forward as compared to NAFTA's Chapter 6, which failed to address issues of access to energy infrastructure given the absence of energy-specific rules on transit fees and third-party access.[77]

Finally, numerous PTAs, including those that do not deal with energy security issues specifically, envisage cooperation on energy infrastructure aspects. The level of detail varies depending on factors such as geographical proximity and the level of integration of energy markets and related infrastructure. At the one end of the spectrum are provisions such as those included in the EU–Ukraine AA's and the EEU Treaty's energy chapters, where Parties commit to facilitate the use of transmission infrastructure and to coordinate with each other on infrastructure developments with a view to further integrate markets of energy goods.[78] At the other hand of the spectrum are provisions included in sectoral cooperation chapters, where Parties agree to develop cooperation in, inter alia, energy matters, including on energy infrastructures, for the purposes of supporting energy competitiveness, security, and efficiency.[79] Such provisions are however not subject to dispute settlement.[80]

A special case is, finally, represented by the EU–UK TCA, which contains provisions of unmatched ambition concerning cooperation between transmission system operators, on the one hand, and between regulatory authorities, on the other hand—in both cases under the guidance of a Specialized Committee on Energy created to this end.[81] Cooperation on infrastructural issues is particularly high on the agenda as both the working arrangements and frameworks for cooperation to be developed between transmission system operators, on the one hand, and the administrative arrangements to be concluded between regulatory authorities, on the other hand, shall cover areas that include access to networks, infrastructure planning, and the efficient use of electricity and gas interconnectors, among others.[82] However, this level of detail reflects the unusually advanced level of integration between the respective energy markets as a result of UK's former membership within the EU.[83]

Provisions governing the organization of energy markets

The third axis of energy security-driven provisions aims at ensuring that energy markets are operated with a view to achieving competitive, transparent and non-discriminatory conditions. The main general rationale is that access to supplies and to infrastructure is not compromised due to anti-competitive practices. Organization of markets provisions are generally subject to standard dispute settlement to the extent that they are included in energy chapters.[84]

Standard provisions include the prohibition of domestic-regulated pricing practices, whereby the price for the domestic supply of wholesale electricity or gas must only be determined by supply and demand, and may be regulated only in the general economic interest (public service

[75] ibid art 5.1(a).
[76] ibid art 5.1(b).
[77] Again, basic GATT disciplines would however apply as a result of standard market access disciplines: Espa and Holzer (n 19) 363. See also Herran and Poretti (n 22) 336.
[78] EU–Ukraine AA, art 274; EEU Treaty, art 79.1(4).
[79] See, eg the Agreement on Economic and Trade Cooperation between the EEU and China, art 10.2(1)–(2) and EU–Georgia AA, art 298. See also the Canada–US Side Letter on Energy, art 3.
[80] Espa (n 3) 267.
[81] See EU–UK TCA, arts 317 and 318, respectively.
[82] ibid art 317.1(b)–(e)–(f) and art 318.1(b)–(e)–(g), respectively. Both provisions are subject to standard dispute settlement.
[83] Espa (n 3) 271. Not surprisingly, the TCA also contains extremely detailed rules on the interoperability of energy infrastructures connecting the EU and the UK, from capacity allocation to congestion management disciplines, that find no parallel in (EU) PTAs: see arts 311–313.
[84] See above, Section 'Provisions governing access to energy supplies'.

obligation).[85] Legitimate public policy objectives, when listed, include, security of supply; regularity, quality, and price of supplies; and environmental protection, including energy efficiency, energy from renewable sources and climate protection.[86] The regulated price shall however not only be 'clearly defined, transparent, non-discriminatory and proportionate',[87] but also limited in time.[88] The methodology underlying the calculation of the regulated price must furthermore be published prior to the entry into force of the regulated price.[89]

In limited cases—that is, in the EU–UK TCA—organization of market provisions also address conditions related to access to energy infrastructure.[90] Each Party in particular is required to ensure that its regulatory framework for the production, generation, transmission, distribution, or supply of electricity or natural gas (including biogas and gas from biomass) is non-discriminatory with regard to fees, rules and treatment within both wholesale and retail markets, as well as balancing markets and capacity allocation mechanisms.[91] Accordingly, the EU–UK TCA is the only agreement envisaging specific provisions on ownership unbundling of transmission system operators.[92]

Finally, virtually all chapters envisage that Parties designate an operationally independent regulatory authority for electricity and gas with a view to ensure effective competition and the efficient functioning of the markets.[93] Such authorities are competent to resolve, impartially and transparently, disputes regarding appropriate terms, conditions, and tariffs for access to and use of transmission and distribution infrastructure within a reasonable period of time.[94]

ENERGY SUSTAINABILITY IN PTAS OF LATEST GENERATION

As explained above, energy sustainability concerns have gradually been incorporated in PTAs negotiated by a wide range of actors through provisions aimed at facilitating trade and investment in the areas of renewable energy and energy-efficient technologies, on the one hand, and at ensuring a legal shelter for certain types of green subsidies, on the other hand. These provisions prioritize the environmental connotation of the energy transition over its potential for enhancing security prospects through increased diversification and efficiency. Such intermediate goals are thus being reoriented to serve the primary goal of promoting *environmentally sustainable* energy trade.

Provisions targeting renewable energy generation and/or energy efficiency specifically

An increasing number of PTAs include provisions and, sometimes, even entire chapters aimed at tackling non-tariff barriers to trade and investment in renewable energy generation, and/or at promoting cooperation between regulators and/or standardization bodies in the areas of energy efficiency and renewable energy for the purposes of facilitating regulatory convergence.

With regard to the first cluster of provisions, the most advanced disciplines can be found in the chapters on 'Non-Tariff Barriers to Trade and Investment in Renewable Energy Generation' included in the PTAs concluded by the EU with Singapore and Vietnam, respectively.[95] Parties commit therein, on the one hand, to use international standards, or parts thereof, as a basis for their technical regulations, standards, and conformity assessment

[85] See, eg EU–Mexico AA, art 5.6(1)–(2).
[86] See, eg EU–Georgia AA, art 216(2).
[87] See, eg EU–UK TCA, art 326; EU–New Zealand FTA, art 13.6.
[88] See, eg art 6.2(b) of the textual proposal for an 'Energy and Raw Materials' chapter in the EU–Australia FTA.
[89] See, eg EU–Georgia AA, art 216(3); EU–Mexico AA, art 5.6(4).
[90] See, however, also the EEU Treaty, art 79.1(5) and arts 81–83.
[91] See EU–UK TCA, arts 303–304. The latter is particularly relevant to enable the integration of renewable energy into the electricity grid: Espa and Cottier (n 6) 1–7.
[92] EU–UK TCA, arts 307–308. Here again, this reflects the implementation of the so-called Third Energy Package occurred before the entry into force of the Agreement: Espa (n 3) 270.
[93] See, eg EU–Ukraine AA, art 277; EU–New Zealand FTA, art 13.11; EU–UK TCA, art 310; EEU Treaty, art 85.
[94] See, eg EU–Chile FTA, art 8.11. Operators affected by the authority's decisions shall have the right to appeal: see, eg EU–Moldova AA, art 353(3) and EU–Mexico FTA, art 5.8.
[95] See Chapter 7 of both agreements.

procedures, except in cases where such standards would be 'ineffective or inappropriate means for the fulfilment of the legitimate objective pursued.'[96] They shall also specify, where appropriate, technical regulations based on product requirements in terms of 'performance, including environmental performances, rather than in terms of design or descriptive characteristics.'[97] Furthermore, they are required to streamline the regime leading to mutual acceptance of respective declarations of conformity, at least for certain products, at certain conditions.[98]

On the other hand, Parties commit to refrain from adopting national measures of a discriminatory nature to promote renewable energy production: this includes measures providing local content requirements affecting the other Party's products, service suppliers, investors, or enterprises;[99] measures requiring an entity of the other Party to form a partnership with a domestic entity to be granted an authorization;[100] and, non-objective, non-transparent and arbitrary authorization, certification and licensing procedures applied to equipment, plants, and associated transmission network infrastructure,[101] as well as procedures for the connection and access to electricity transmission grids.[102] Importantly, this sub-set of provisions is reproduced *mutatis mutandis* in some of the most recently negotiated 'Energy and Raw Materials' chapters by the EU.[103] Both sub-sets are explicitly subject to the general exceptions and to the security exceptions provided under the agreements so that the Parties could still adopt or enforce measures that are, inter alia, 'necessary for the safe operation of the energy networks concerned, or the safety of energy supply'.[104]

The second cluster of provisions aim at promoting cooperation between regulators and/or standardization bodies in the areas of energy efficiency and/or renewable energy for the purposes of facilitating (i) the convergence, or harmonization where possible, of respective standards, technical regulations, and conformity assessment procedures; (ii) the development of common standards; (iii) joint analysis, methodologies, and approaches to assist in the development of such standards; and, (iv) the promotion of standards, including product design and eco-labelling, through existing international initiatives.[105] Importantly, the inclusion of such provisions at this level of detail has become common practice in most recent 'Energy and Raw Materials' chapters of the EU.[106] The newest of such chapters also include a provision aimed at promoting cooperation in research, development, and innovation in the areas of energy efficiency and renewable energy (and raw materials), with a view to disseminate information and best practices on economically efficient and environmentally sound technologies, practices, and processes that could minimize the harmful environmental impacts in the entire energy goods (and raw materials) chains.[107]

[96] EU–Singapore FTA, art 7.5(1) and EU–Vietnam FTA, art 7.5(2).

[97] EU–Singapore FTA, art 7.5(2) and EU–Vietnam FTA, art 7.5(3).

[98] EU–Singapore FTA, art 7.5(3) (for products listed in HS Chapter 84 (except 8401) as well as in HS 850231 and 854140) and EU–Vietnam FTA, art 7.5(4)–(7).

[99] EU–Singapore FTA, art 7.4(a) and EU–Vietnam FTA, art 7.4(a).

[100] EU–Singapore FTA, art 7.4(b) and EU–Vietnam FTA, art 7.4(b).

[101] EU–Singapore FTA, art 7.4(c) and EU–Vietnam FTA, art 7.4(c).

[102] EU–Singapore FTA, art 7.4(d) and EU–Vietnam FTA, art 7.4(d).

[103] Such provisions, however, do not target trade and investment in raw materials but only focus on renewable energy. See, eg EU–Kazakhstan FTA, art 147 ('Renewable Energy Sector'); EU–India, art 13 of the EU textual proposal ('Non-tariff Barriers to Trade and Investment in Renewable Energy Production'). The same is true for EU–UK TCA, art 319.

[104] EU–Singapore FTA, art 7.6 and EU–Vietnam FTA, art 7.6. This is provided that they are not applied in a way that would constitute an arbitrary or unjustifiable discrimination between the Parties' products, services suppliers or investors under like circumstances, or a disguised restriction on trade and investment between the Parties.

[105] See, eg EU–New Zealand FTA, art 13.12 and EU–Mexico AA, art 5.10.

[106] Here again, raw materials are not targeted by such provisions. See, for instance, eg EU–Mexico AA, art 5.10; EU–New Zealand, art 13.13. See also the EU textual proposals for an 'Energy and Raw Materials' chapter in the EU–Australia FTA (art 15), EU–India FTA (art 16); EU–Indonesia (art 2) and EU–Tunisia (art 17). It is worth-noting that the provisions included in the 'Energy and Raw Materials' chapter are subject to standard dispute settlement under the agreements.

[107] See eg EU–Chile FTA, art 8.14; EU–UK TCA, art 324; EU–New Zealand FTA, art 13.13; and arts 16 and 17 of the EU textual proposals for an 'Energy and Raw Materials' chapter in the EU–Australia FTA and the EU–India FTA, respectively.

Most recent non-traditional agreements such as the Australia–Singapore Green Economy Agreement also include provisions on standards, technical regulations, and conformity assessment procedures on the green economy as a priority area of collaboration.[108] Less specific provisions seeking cooperation on standards in the areas of renewable energy and/or energy efficiency are furthermore included in several other agreements negotiated by the EU[109] and other actors such as the USA,[110] whereas provisions calling more generally for promoting cooperation in both fields are now widely spread across PTAs but remain mostly couched in hortatory, non-legally binding language and are not enforceable.[111]

Provisions targeting environmental goods and services

The promotion of renewable energy and energy efficiency has also been achieved in PTAs through disciplines aimed at facilitating trade and investment in environmental goods and services by means of addressing both tariffs and non-tariffs barriers. The inclusion of at least a provision targeting environmental goods and services is standard practice in virtually all PTAs including a 'Trade and Sustainable Development' chapter, a 'Trade and Environment' chapter, or an 'Environment' chapter. The levels of normativity and enforceability of environmental goods and services disciplines, however, changes considerably, with a major step forward in latest years, in parallel with a progressively clearer focus on climate-friendly goods and services in most recent and detailed provisions.

At the one end of the spectrum are those provisions that generally commit the Parties to facilitate and promote trade and investment in environmental goods and services with a view to enhance trade and investment's contribution to sustainable development and/or climate change. Earlier and/or least ambitious provisions do not go much far than that,[112] whereas later in time and/or most advanced disciplines of this kind also specify the macro-categories of goods and services that would (non-exhaustively) qualify under the provisions, which most often include sustainable renewable energy and energy-efficient (and eco-labelled) goods and services, and/or mention Parties' efforts to address both tariffs and/or non-tariff barriers.[113] Such provisions, however, are generally couched in hortatory language ('shall

[108] See Australia–Singapore Green Economy Agreement, para 9(b). Within the ACCTS, Parties have been negotiating principles-based guidelines for voluntary eco-labelling programmes with a view to ensure, inter alia, that 'eco-labels are able to best achieve their environmental purposes': New Zealand Foreign Affairs and Trade, 'ACCTS Chair's Statement from New Zealand—Round 13, June 2023' <https://www.mfat.govt.nz/en/media-and-resources/accts-chairs-statement-from-new-zealand-round-13-june-2023/> accessed 30 June 2023.

[109] See, eg EU–Singapore FTA, art 12.11; EU–Central America FTA, art 65; EU–Kazakhstan FTA, art 207(1); EU–Kirghizstan, arts 254–255. The TCA is once again a special case to the extent that its 'Energy' Title includes a specific chapter on 'Safe and Sustainable Energy' where the Parties explicitly reaffirm, for the first time in a PTA, their respective renewable energy and energy efficiency targets (art 319(3)). In accordance with such objectives, the Agreement not only seeks cooperation on the development of international standards with respect to energy efficiency and renewable energy (art 323), but also cooperation in the development of offshore renewable energy in the North Sea Region (art 321).

[110] See USMCA, Annex 12-D on 'Energy Performance Standards' and Canada–US Side Letter on Energy, art 3 (with a focus on energy efficiency). See also the Agreement between New Zealand and the Separate Customs Territory of Taiwan, Penghu, Kinmen, and Matsu on Economic Cooperation (ANZTEC), Chapter 17, art 3.2(d).

[111] These are mainly provisions included in 'Cooperation' chapters, 'Trade and Environment' chapters, and/or 'Trade and Sustainable Development' chapters. See, eg EU-CARICOM Economic Partnership Agreement, art 138; EU–Kazakhstan FTA, arts 207–208; Canada–Jordan Agreement on Environment, art 14; New Zealand–South Korea FTA, Annex 16-A, para 2(a)–(b); EU–Kenya FTA, Annex V, art 6.6(a); New Zealand–UK FTA, art 22.19; Central America–Korea FTA, arts 17.11 and 19.6; China–Colombia FTA, art 19.1; China–Uruguay FTA, art 12.11(4)(k); Argentina–Chile FTA, art 13.10(3); Brazil–Chile FTA, art 17.14(4).

[112] See eg EU-Andean Community (Colombia, Peru and Ecuador) FTA, art 271.2; EU–Canada Comprehensive Economic and Trade Agreement (CETA), arts 22.3(2) and 24.12(1)(f); China–Korea FTA, art 16.7(2)(a).

[113] These include mostly PTAs concluded by the EU: see, eg EU–Ukraine AA, art 293.2; EU–Moldova AA, art 367(b)–(c); EU–Georgia AA, art 231(b)–(c); EU–Central America FTA, art 288.2(b); EU–Singapore FTA, art 12.11(2); EU–Vietnam FTA, art 13.10(2); EU–Japan, art 16.5(c); EU–South Korea, art 13.6(2); EU–Chile FTA, art 8.2(c); EU–Mexico AA, art 5.10; EU–UK TCA, arts 400.2(c) and 405.2(b); EU–Australia FTA, art 5.2(c) of the EU Textual Proposal; EU–Indonesia, art 10.2(b) of the EU Textual Proposal; EU–India FTA, art 6.4(b) of the EU Textual Proposal. It also includes, however, PTAs concluded by EFTA States (see, eg EFTA–Central America FTA, art 9.7; EFTA–Philippines FTA, art 11.7; EFTA–Indonesia FTA, art 8.4), the USA

strive to facilitate' and/or 'promote', 'shall endeavour to adress') and mainly not enforceable.[114] In a few notable cases that include the USMCA, the CPTPP, and the UK–Australia FTA, however, the provisions—included in the 'Environment' chapter—envisage that Parties may raise issues concerning barriers to trade and investment in environmental goods and services to, and seek to address them through, a designated body—the Environment Committee[115] or the Environment Working Group.[116] In such cases, failure of consultations means that Parties can request that the matter is resolved through standard dispute settlement.[117]

At the other end of the spectrum are most ambitious disciplines concluded in latest PTAs negotiated under the leadership of New Zealand: these include the recent UK–New Zealand FTA, the ANZTEC, and the EU–New Zealand FTA. In such agreements, the Parties committed to eliminate custom duties imposed on environmental goods originating in the other Party;[118] the agreements contain extensive lists of environmental goods to this end, which include items in the areas of renewable and low carbon energy, energy efficiency and, more generally, climate change mitigation and adaptation technologies.[119] The main difference is that, in the case of the UK–New Zealand FTA, it is envisaged that the Environment and Climate Change Sub-Committee keeps the list under review and, where appropriate, makes recommendations for modifications to the list,[120] whereas in the case of the EU–New Zealand FTA the list is explicitly non-exhaustive.[121]

Finally, similarly ambitious disciplines on environmental goods and services are included in the Australia–Singapore Green Economy Agreement. The Agreement committed the Parties to develop and identify a list of environmental goods and services 'supporting the transition to sustainable economic growth'[122] through the contribution to, inter alia, 'mitigating greenhouse gas emissions such as through a transition to the use of renewable and sustainable energy sources and technologies'.[123] Both lists were completed,[124] and countries committed to improve market access for such goods and services by continuing to address both tariff and non-tariff barriers through bilateral, regional, and multilateral mechanisms.[125] The liberalization of environmental goods and services is also one of the negotiating dossiers within the AACTS. While the outcomes of the negotiating rounds concluded to date have not been officially disclosed, a recent AACTS' Chair Statement from New Zealand confirmed that more than 300 environmental products have already been identified for liberalization.[126]

(see, eg USMCA, art 24.24), Canada (see, eg Canada–Korea FTA, art 17.4), the UK (see, eg UK–Australia FTA, art 22.6), and recent mega-regionals (see, eg CPTPP, art 20.18).

[114] It is worth noting that, in EU PTAs, 'Trade and Sustainable Development' chapter provisions have until recently not been subject to the standard dispute settlement mechanism, but rather to a specialized 'Panel of Experts' procedure. The same applies to, eg EFTA PTAs. The EU approach, however, has changed with the recent EU–New Zealand FTA and the EU–Kenya Economic Partnership Agreement: I Espa, 'Enforcing Sustainability Obligations: Adjudication and Post-Adjudication Enforcement' in K Claussen and G Vidigal (eds), *The Sustainability Revolution in International Trade Agreements* (OUP forthcoming).

[115] See USMCA, art 24.24 (3) and CPTPP, art 20.18(3).

[116] See UK–Australia FTA, art 22.6(3).

[117] See USMCA, art 24.32; CPTPP, art 20.23; UK–Australia FTA, art 22.6.

[118] UK–New Zealand FTA, art 22.7; ANZTEC, Chapter 17, art 3.2(a); EU–New Zealand FTA, art 19.11(2).

[119] UK–New Zealand FTA, Annex 22A; ANZTEC, Annex 7; EU–New Zealand FTA, Annex 19. The lists respond to different definitions of environmental goods espoused under the agreements, reflecting the lack of consensus on an international accepted definition: see eg ANZTEC, Chapter 17, art 3.2(a), footnote 13 and EU–New Zealand FTA, art 19.11(2).

[120] UK–New Zealand FTA, art 22.7(2)(a).

[121] EU–New Zealand FTA, art 19.11(2).

[122] Australia–Singapore Green Economy Agreement, para 9(a)(iii).

[123] ibid para 9(a)(vi)c.

[124] ibid Annex B.1.1 and Annex B.1.2.

[125] ibid Annex B.1.3.

[126] ACCTS Chair's Statement from New Zealand (n 108).

Subsidies disciplines

PTAs of latest generation have also started tackling energy sustainability concerns through rules on subsidies. This includes disciplines aimed at explicitly allowing the use of certain types of green subsidies, on the one hand, and at limiting the use of fossil fuel subsidies, on the other hand. The inclusion of such provisions is a relatively recent development and has substantially been led by the EU and by New Zealand for what concerns green subsidies and fossil fuel subsidy reform disciplines, respectively.

Rules on renewable energy subsidies

Up until now, only a few PTAs concluded by the EU have included subsidies disciplines that could accommodate energy sustainability concerns. This has mainly been done via exemption clauses for certain listed categories of subsidies that might be interpreted to encompass subsidies related to the transition to a low-carbon economy—again with different levels of ambitions.[127] Such clauses were first introduced in the EU–Singapore FTA and the EU–Vietnam FTA, albeit with different levels of normativity and enforceability. In the former, subsidies other than prohibited subsidies may be admissible when they are necessary to achieve an objective of public interest, and provided that the amounts of the subsidies involved are limited to the minimum needed to achieve this objective and their effect on trade of the other Party is limited.[128] Among the (illustratively) listed admissible categories are, in particular, 'subsidies to facilitate the development of certain economic activities or of certain economic areas', including inter alia subsidies for research, development, and innovation purposes and subsidies for environmental purposes.[129] A similar list is also provided in the EU–Vietnam FTA.[130] In this case, however, not only is the scope of the exemption formulated more broadly, but—contrary to what is envisaged under the EU–Singapore FTA—the relevant provisions are also subject to specific consultation procedures and to the dispute settlement mechanisms established under the Agreement.[131]

While such exemption clauses could arguably cover subsidies related to the transition to the low-carbon economy, latest agreements such as the EU–UK TCA contain unprecedentedly detailed provisions on admissible subsidies: in addition to some key guiding principles to determine whether a subsidy can be allowed drawing from EU state aid law (eg (i) the subsidy pursues a specific public objective; (ii) it is proportionate and appropriate (ie the least trade-distortive means) to achieve the objective; (iii) its positive contributions towards the objective outweigh its adverse economic effects),[132] more specific conditions also apply to certain categories of subsidies, including energy and environmental subsidies (eg they should aim at delivering a secure, affordable and sustainable energy system or at increasing the level of environmental protection).[133] Further, an Annex on 'Energy and Environmental Subsidies' contains additional conditions with regard to subsidies for electricity generation adequacy, renewable energy and cogeneration, with a view to avoid that they undermine the correct functioning of the electricity markets, or jeopardise the environmental objectives of climate policy instruments.[134] Finally, and importantly, these substantive rules are subject to a procedural framework that is unmatched

[127] Espa and Durán (n 12).
[128] EU–Singapore FTA, Annex 11-A, para 2.
[129] ibid Annex 11-A, para 2 (e), footnote 1.
[130] EU–Vietnam FTA, art 10.4.
[131] See EU–Singapore FTA, art 11.14 and EU–Vietnam FTA, art 10.8(2). For a detailed appraisal, see Espa and Durán (n 12) 127.
[132] EU–UK TCA, art 366.
[133] ibid art 367.
[134] ibid Annex 27, para 1(1).

in other EU PTAs with respect to transparency requirements, institutional set-up, judicial oversight of subsidies' legality (which is primarily left to domestic courts for individual subsidies), dispute settlement, and enforcement.[135]

Rules on fossil fuel subsidies

Thus far, there are only a handful of PTAs including disciplines on fossil fuel subsidies (FFSs). The first agreement to introduce a (hortatory and not enforceable) provision on FFSs was the EU–Singapore FTA, where the Parties recognize the importance of the goal of progressively reducing fossil fuels.[136] Most recent efforts to include FFS provisions in PTAs have been led by New Zealand, both in the context of it most advanced bilateral deals concluded with the EU and the UK, and within the ACCTS negotiations.

With regard to the latter, Parties not only declared their commitment towards including disciplines to eliminate harmful fossil fuel subsidies, but also acknowledged the 'complexities of reforming fossil fuel subsidies across a set of diverse economies'.[137] The level of ambition of the outcome remains to be seen but many expects formally binding rules on FFS reform.[138]

The recent deals concluded by New Zealand with the EU and the UK, respectively, may arguably indicate where the ACCTS negotiations may be directed. The EU–New Zealand FTA is the least ambitious, albeit it remains the first EU PTA including an article on FFS reform.[139] In this provision, the Parties recall the Sustainable Development Goals 12.C, the Glasgow Climate Pact and the WTO Ministerial Statement on FFSs reform and then 'reaffirm their commitment to work to meet' the goal of 'reforming and progressively reducing fossil fuel subsidies … in accordance with national circumstances'.[140] They also commit to cooperate and encourage other members to pursue FFSs reform in international fora, and particularly through new FFS disciplines in the WTO, including on transparency and reporting.[141] Although this provision is not formulated in legally binding language, it is interesting to read it in combination with Article 16.1 of the Agreement, included in the 'Subsidies' chapter. Under this (fully enforceable) provision, the Parties recognize that 'in principle, subsidies should not be granted by a Party when they negatively affect, or are likely to affect, competition or trade or significantly harm the environment'.

Starting from the same premises inspiring the EU–New Zealand FTA, in the UK–New Zealand FTA the Parties commit, among others, to 'take steps to eliminate' harmful fossil fuel subsidies and to 'end' unabated coal-fired electricity generation in their territories, direct financial support such as officially supported export credits for fossil fuel energy in non-parties, and international aid funding for fossil fuel energy.[142] They also commit to enhance transparency on FFSs and to encourage non-parties to undertake FFS reform.[143] This provision is not only legally binding but also subject to standard dispute settlement.[144]

[135] ibid arts 369–375.
[136] EU–Singapore FTA, arts 12.11(3) and 12.16.
[137] ACCTS Chair's Statement from New Zealand (n 108).
[138] Asmelash (n 7) 996.
[139] EU–New Zealand FTA, art 19.7.
[140] ibid art 19.7(2).
[141] ibid art 19.7(3).
[142] UK–New Zealand FTA, art 22.8.
[143] ibid, art 22.8(d) and (g).
[144] ibid art 22.26.

CONCLUDING REMARKS

This article has provided a comparative analysis of the energy disciplines included in PTAs of latest generation with a view to illustrate common traits and main differences as well as to identify main areas of innovation and most critical shortcomings, particularly from a sustainability perspective. The analysis shed light on the state of the interplay between energy security and energy sustainability concerns in recent PTAs and revealed that, while PTAs have come a long way in tackling such concerns, their potential for promoting more environmentally sustainable energy trade remains largely untapped. The following conclusion draws on a number of considerations.

The first is that energy disciplines have only relatively recently started being incorporated in PTAs—and only in the case of a few actors (the EU *in primis* and, to a lesser extent—that is, for what concerns limited portions of the existing energy disciplines taxonomy presented in this paper—other actors such as New Zealand, EFTA States, the UK) has this happened systematically. Importantly, as shown by (NAFTA as a landmarking case and then by) the EU PTAs example, the main rationale for including energy-specific chapters in PTAs in the first place essentially relates to energy security concerns, with earlier chapters tackling 'classical' issues of access to energy supplies, access to infrastructure and complementary organizational aspects of energy markets, and addressing environmental sustainability concerns only but peripherally. This means that the sustainability-informed disciplines included in such chapters operate as an 'additional layer' for the purposes of limiting the negative externalities linked to the implementation of those energy security-driven provisions meant to enable and protect trade in conventional energy resources.[145] In other words, the fact that sustainability considerations are incorporated in such chapters is not sufficient to alter the primacy of security over sustainability concerns.

The second consideration is that the increased awareness of the urgency to address the trade–energy–climate nexus has led to a gradual metamorphosis of energy security-driven provisions, on the one hand, and to the progressively standard (although not standardized) incorporation of energy sustainability-driven provisions, on the other hand. The former trend has again mainly concerned energy chapter provisions of EU PTAs. At first, we assist at the gradual incorporation of sustainability considerations into all three axes of energy security-driven provisions with a view to mitigate the environmentally harmful effects of increased trade in conventional energy resources (eg provisions requiring to perform an environmental impact assessment prior to granting authorizations to explore for and produce hydrocarbons).[146] Subsequently, the energy chapters develop into a relatively balanced combination of earlier 'Energy and Raw Materials' (security-driven) chapters and more recent 'Non-Tariff Barriers to Trade and Investment to Renewable Energy Generation' (sustainability-driven) chapters. Here, the goal of improving the environmental sustainability of energy trade complements the objective of enhancing energy security through renewables-led diversification of supplies. This balance is however ultimately tilted towards the sustainability end in the latest PTAs, such as the EU–UK TCA, where even classical energy security concerns are tackled instrumentally to accommodate for increasing shares of renewables with a view to 'contributing to the fight against climate change', and even the overarching objective of the energy chapter explicitly reflects the primacy of sustainability concerns.[147] While the innovative features of the TCA do reflect to a

[145] These considerations build on the analytical framework developed by J Viñuales (n 2) 29–41, with regard to the structure of international energy transactions.

[146] See, eg EU–Mexico AA, art 8.8. For more details, see above, Section 'Provisions governing access to energy supplies'.

[147] See the EU–UK TCA, art 299, which states that the chapter's objective is 'to facilitate trade and investment between the Parties in the areas of energy and raw materials, and to support security of supply and environmental sustainability, notably in contributing to the fight against climate change in those areas'.

large extent the specifics of the EU–UK trade relationship,[148] it is encouraging to notice that environmental sustainability goals have also acquired centrality in a number of other energy chapters negotiated most recently in the context of, eg the EU–New Zealand FTA and the EU–Australia FTA.[149]

The second trend is, importantly, widely spread across PTAs, although energy sustainability-driven provisions included in 'Trade and Environment' chapters, 'Trade and Sustainable Development' chapters, and/or 'Cooperation' chapters greatly differ as to levels of normativity and enforceability.[150] Rules in this domain are, however, significantly progressing in the way they tackle both tariff and non-tariff barriers hampering trade and investment in renewable energy and energy-efficient technologies, on the one hand, and energy subsidies, on the other hand. As to the former, an increasing number of PTAs include provisions on regulatory convergence in these areas, whereas most recent agreements go as far as requiring Parties to eliminate tariffs on lists of environmental goods that are calibrated having climate change mitigation goals in mind.[151] As to the latter, PTAs have started introducing targeted exemption clauses for green subsidies and provisions on fossil fuel subsidy reform.[152] While the most ambitious innovations can be found in just a handful of PTAs negotiated by the usual suspects (ie the EU, the UK, New Zealand) for now, it is indicative of an ongoing transformational change in the way countries look at the negotiation of more advanced energy disciplines, that is, not just as complements to be understood from the lenses of their potential for increased diversification for security purposes, but as one of the structural conditions for increasing PTAs' (and, more generally, trade's) contribution to environmental sustainability, and notably to climate change action.[153]

Finally, the potential for accelerating this transformational change could arguably be exploited through the conclusion of more non-traditional agreements such as the Australia–Singapore Green Economy and, most importantly, open plurilaterals such as the ACCTS. Such agreements could not only experiment with energy sustainability-driven provisions and bring them to the next level, but also play an instrumental role in furthering norm diffusion in PTAs[154] and, potentially, contributing to progress on relevant issues (eg environmental goods and services, fossil fuel subsidy reform, subsidies related to the transition to a low-carbon economy) within other initiatives carried forward under the auspices of the WTO for the purposes of fostering environmental sustainability through energy trade such as the TESSD dialogue.

[148] I Espa, H van Asselt and D Coppens, 'Energy Subsidies and International Trade Law', in M Mehling and H van Asselt (eds), *Research Handbook on Climate Finance and Investment Law* (Edward Elgar, forthcoming).

[149] As to the latter, art 13.1 states that the objectives of the Chapter are 'to facilitate trade and investment between the Parties to promote, develop and increase energy generation from renewable sources and the sustainable production of raw materials, including through the use of green technologies'. Similarly, see the EU–Australia FTA, art 1 of the textual proposal for an 'Energy and Raw Materials' chapter.

[150] See, Section 'Energy sustainability in PTAs of latest generation'.

[151] See, Section 'Provisions targeting environmental goods and services'.

[152] See, Section 'Subsidies disciplines'.

[153] Similarly, see also Dent (n 10), Cima (n 10) 693–5.

[154] See, among others, Baccini, Dür and Haftel (n 16) 167–91.