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## Promoting and Facilitating Trade in Environmental Goods and Services: Lessons From Regional Trade Agreements

TECHNICAL PAPER

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## Contents

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1. Introduction	7
2. Approaches to EGS in Regional Trade Agreements	9
3. Scope and Coverage	10
3.1 Environmental Goods	10
3.2 Environmental Services	13
4. Substantive Provisions	16
4.1 Market Access Commitments	16
4.2 General Cooperation on EGS	19
4.3 Sectoral Approaches on Regulatory Cooperation and Good Regulatory Practices	19
4.4 Subsidies and Local Content Requirements	22
4.5 Government Procurement	23
4.6. Support Measures: Technical Assistance, Finance, and Capacity Building	24
5. Conclusion	27
References	28
ANNEX. Illustrative Sample of EGS-Related Provisions in RTAs	32

## Tables

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Table 1. Environmental Categories for Products Included in the APEC List	11
Table 2. Examples of Services with a Clear Environmental Purpose Outside of CPC Division 94	14
Table 3. Examples of Environmental Services Identified Through Ex Outs	16
Table 4. Examples of RTA Provisions on Regulatory Cooperation and Good Regulatory Practices in EGS	21
Table 5. Examples of Technical Assistance, Capacity Building, and Financial Cooperation relevant to EGS	27

# Executive Summary

With the impacts of intersecting environmental crises mounting, governments face the considerable challenge of ensuring that trade is environmentally sustainable. The shift to sustainable modes of production and consumption will require significant economic transformations in countries at all levels of development while remaining focused on securing a just transition and promoting sustainable development. Trade and trade policies have a key role to play in this process. Trade is increasingly seen as a tool to help foster the diffusion and uptake of technologies vital for climate change mitigation and adaptation, pollution reduction, and biodiversity conservation, and as a way to facilitate the transition to a more circular and resource-efficient economy. This recognition is prompting renewed interest in promoting and facilitating trade in environmental goods and services (EGS).

## Regional Trade Agreements as Incubators for Cooperation on EGS

At the multilateral level, discussions on EGS are gaining fresh momentum, notably in the context of the Trade and Environmental Sustainability Structured Discussion (TESSD) and the Informal Dialogue on Plastics Pollution and Environmentally Sustainable Plastics Trade (IDP) launched in 2020 at the World Trade Organization (WTO). This comes after years without significant action on this topic at the WTO, during which time attention shifted to bilateral and regional initiatives.

As regional trade agreements (RTAs) have become the preferred avenue to facilitate and promote trade in EGS, these agreements have gone beyond existing WTO commitments in certain areas. They have also served as incubators for new approaches and laboratories to test new ideas. Several WTO members have highlighted the need to build on the experience of RTAs in facilitating and promoting trade in EGS and explore how this experience could inform multilateral discussions.

As a contribution to these discussions, this paper reviews approaches to incorporating EGS-related provisions in trade agreements, defining the scope and coverage of EGS, and designing substantive provisions on EGS. It also examines support measures for developing countries. Based on this analysis, it presents a set of options that WTO members could consider when exploring ways to facilitate and promote trade in EGS.

## Incorporating EGS-Related Provisions

With the exception of a few dedicated initiatives, there have been three main approaches to incorporating EGS-related provisions in RTAs. First, a number of RTAs have included measures aimed at facilitating trade in EGS in horizontal RTA chapters. Such provisions tend to be of an exhorting nature and are often excluded from the scope of the dispute settlement mechanism. Second, commitments on EGS have been integrated in the individual schedules of commitments of parties. Third, EGS-related provisions have been included in sectoral chapters or annexes dedicated to specific technologies or environmental concerns.

## Defining the Scope and Coverage of EGS

An important challenge facing trade negotiators is to define what constitutes an environmental good. In the absence of a universally agreed definition, this has proven to be a source of substantial disagreement in discussions at the WTO. The challenge of defining the scope and coverage of environmental goods is reduced in RTAs that consider ambitious across-the-board liberalization, making an agreed definition of environmental goods unnecessary. For RTAs that seek to identify environmental goods, the favoured approach has been to agree on a specific list. RTAs have taken different approaches to reaching agreement on such a list.

The environmental services sector is rapidly evolving. The services classification that serves as the common reference to identify environmental services and describe the liberalization commitments undertaken by members is widely considered as too narrowly defined. Here again, RTAs have taken different approaches to identify environmental services and reach consensus on the scope of commitments.

## Substantive Provisions on EGS in RTAs

### *Market Access*

Approaches to market access in environmental goods vary. In most RTAs, liberalization extends across the board, only exempting certain sensitive products or providing for longer phase-out periods. In contrast, some agreements include commitments to voluntary reductions on a limited set of products. RTAs have also adopted options between these extremes. This includes, for example, front-loading a list of specific environmental products for faster liberalization or conditioning preferential market access to goods that are sustainably produced.

Regarding environmental services, whether through positive or negative list approaches, market access and national treatment provisions are generally deeper and broader in scope in RTAs than in the WTO context.

### *General Cooperation*

A number of RTAs have general non-binding provisions that provide for cooperation and technical assistance on the promotion of trade and investment in environmental goods, including trade facilitation. Most of these provisions are found in chapters that deal with trade and environment or trade and sustainable development.

### *Regulatory Cooperation*

Non-tariff measures, especially technical barriers to trade, can be important tools for governments to advance public policy objectives related to the environment. However, for reasons that can range from compliance costs to the scaling-up of environmental solutions, there is often a strong rationale for harmonization, mutual recognition, or enhanced cooperation in the design and implementation of environmental standards and regulations.

RTAs have been used as vehicles to address non-tariff barriers through dedicated provisions in chapters dealing with technical barriers to trade and also on good regulatory practices and regulatory cooperation. These provisions usually seek to promote enhanced coordination among parties in the design, development, enforcement, or assessment of their regulatory measures. While many do not refer specifically to the environment, several RTAs have established EGS-specific disciplines.

### *Subsidies and Local Content Requirements*

Depending on their design, subsidies can affect trade in EGS directly or indirectly in ways that can either constrain or stimulate trade opportunities. As governments seek to foster domestic productive capacities in EGS, they sometimes condition support on local content requirements. While several RTAs reaffirm existing WTO disciplines in these areas, others contain provisions that go beyond WTO rules in terms of scope and coverage. Investment chapters in some RTAs also include disciplines on local content policies that are more stringent than WTO rules and that apply to services.

### *Government Procurement*

Green procurement can be a powerful lever to influence market demand, promote the uptake of EGS, set minimum environmental standards, and encourage the development of local EGS industries. However, procurement measures can discriminate against foreign suppliers. For this reason, the WTO Government Procurement Agreement (GPA) contains disciplines, with exceptions related to environmental considerations, although these rules only apply to countries that are parties to the agreement.

Most RTAs that have been notified to the WTO in recent years contain provisions on government procurement, whether of a detailed or a limited nature. The flexibility to set environment-related procurement criteria is also present in many RTAs. However, most RTAs do not move beyond the coverage provided in the WTO GPA in terms of entities and sectors.

### *Support Measures: Technical Assistance, Finance, and Capacity Building*

Several RTAs involving parties from developing countries incorporate clauses covering different forms of support measures. These measures respond to the need to support a just transition in developing countries and overcome shortfalls in technological and institutional capacities. They primarily relate to two dimensions. First, the transfer of environmental technology, usually in the form of best endeavour provisions. Second, technical assistance, finance, and capacity building, where RTAs often include provisions on cooperation and capacity building aimed at institutional strengthening, improved environmental management, the development of environmental projects, information sharing, and financial cooperation.

## Lessons for International Cooperation on Trade in EGS

In the absence of significant action on facilitating and promoting trade and investment in EGS at the multilateral level, RTAs have become the locus for cooperation in this area. While the provisions contained in these agreements vary widely, they provide useful examples of the type of cooperation that could be considered at multilateral level.

Lessons from existing RTA experiences are particularly relevant in four main areas. First, RTAs have been at the forefront of determining what constitutes EGS. Second, many RTAs have gone beyond a pure market access agenda to incorporate EGS-related provisions on regulatory cooperation, government procurement, investment, and support measures, such as technology transfer, technical assistance, finance and capacity building. Third, RTAs have spearheaded the design of sectoral approaches to deal with non-tariff barriers focusing on particular environmental concerns. Finally, RTAs have explored a wide range of collaborative efforts that go beyond traditional WTO negotiated outcomes, including voluntary commitments, pledges and best endeavour clauses.

## ABBREVIATIONS

ACCTS	Agreement on Climate Change, Trade and Sustainability
ACP	African, Caribbean and Pacific
ANZTEC	Agreement between New Zealand and the Separate Customs Territory of Taiwan, Penghu, Kinmen, and Matsu on Economic Cooperation
APEC	Asia-Pacific Economic Cooperation
CEPA	Comprehensive Economic Partnership Agreement
CETA	Canada-European Union Comprehensive Economic and Trade Agreement
CPC	Central Product Classification
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
EFTA	European Free Trade Association
EGS	Environmental Goods and Services
EPA	Economic Partnership Agreement
EU	European Union
FTA	Free Trade Agreement
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GPA	Government Procurement Agreement
HS	Harmonized Commodity Description and Coding System
IDP	Informal Dialogue on Plastics Pollution and Environmentally Sustainable Plastics Trade
MFN	Most Favoured Nation
RTA	Regional Trade Agreement
SCM	Subsidies and Countervailing Measures
TESSD	Trade and Environmental Sustainability Structured Discussion
UK	United Kingdom
US	United States
USMCA	United States-Mexico-Canada Agreement
WTO	World Trade Organization

# 1. Introduction

As countries recover from the COVID-19 pandemic, the need to build more resilient and cleaner economies and accelerate the transition to a low-carbon economy is also gaining ground in international economic policy discussions. In these discussions, trade is increasingly seen as a tool to help foster the diffusion and uptake of technologies vital for climate change mitigation and adaptation, pollution reduction, and biodiversity conservation, and as a way to facilitate the transition to a more circular and resource-efficient economy.

More generally, with the negative economic impacts of intersecting environmental crises mounting, governments and stakeholders are faced with the challenge of ensuring that trade is environmentally sustainable. This shift towards sustainable production and consumption will require huge economic transformations in countries at all levels of development while remaining focused on ensuring a just transition. Trade and trade policies have a critical role to play in this process.

This recognition has prompted calls for renewed efforts to facilitate and promote trade in environmental goods and services (EGS). At the multilateral level, this topic is attracting focused attention in the context of the Trade and Environmental Sustainability Structured Discussion (TESSD) launched in 2020 at the World Trade Organization (WTO). In December 2021, ministers from 71 WTO members issued a ministerial statement calling on co-sponsors to “explore opportunities and possible approaches for promoting and facilitating trade in environmental goods and services to meet environmental and climate goals, including through addressing supply chain, technical and regulatory elements.” They also agreed to “identify and compile best practices, as well as explore opportunities for voluntary actions and partnerships to ensure that trade and trade policies are supportive of and contribute to: [...] promoting and facilitating access to environmental goods and services, including encouraging the global uptake of new and emerging low-emissions and other climate-friendly technologies.”<sup>1</sup>

The ministerial statement builds on a series of submissions tabled in the TESSD discussion in 2021, ranging from calls for unilateral liberalization of environmental goods to proposals to resume negotiations among a critical mass of WTO members, as well as recommendations for a wider approach that looks beyond a pure liberalization or market access agenda. Here, a number of co-sponsors have underlined the relevance of non-tariff barriers, regulatory cooperation, and sustainability standards to the goal of promoting trade in EGS. They have also stressed the importance of linked issues such as access to finance and relevant technologies, government procurement, capacity building, and intellectual property rights and technology transfer.<sup>2</sup>

At the same time, many members have also emphasized the importance of better understanding the range of opportunities and challenges relevant to developing countries, including their participation in exports of EGS and in green value chains as well as the development of productive capacities and export competitiveness in EGS. As such, rather than restart talks on liberalization, the TESSD statement puts emphasis on ensuring a broad-based understanding of shared priorities and approaches to promoting and facilitating trade in ESG that would ensure effective environmental outcomes and trade benefits for the diversity of members.

To advance this agenda, co-sponsors have created an informal working group on EGS (one of four informal working groups created under the TESSD) centred on three questions: These include:

- How can trade in environmental goods and services aid in achieving environment and climate goals?
- What are the opportunities, best practices, and possible approaches for promoting and facilitating trade in environmental goods and services to meet

1. Trade and Environmental Sustainability Structured Discussions (TESSD), Ministerial Statement on Trade and Environmental Sustainability of 3 December 2021, WTO Doc. WT/MIN(21)/6/Rev.1 (2021b).

2. See proposals tabled by Australia, the Republic of Korea, and Singapore (INF/TE/SSD/W/9); Canada (INF/TE/SSD/W/3); Japan (INF/TE/SSD/W/10); Korea (INF/TE/SSD/W/8); and the UK (INF/TE/SSD/W/6). During the course of discussions in the TESSD, a number of developing country delegations have highlighted a range of issues and considerations, including challenges hindering their ability to engage in and maximize benefits from trade in environmental goods and services (WTO, 2022a).

environmental and climate goals, including through addressing supply chain, technical and regulatory elements, promoting and facilitating access to and uptake of new and emerging low-emissions and other climate-friendly technologies, and attention to issues of particular interest to developing countries?

- What challenges and policies impede the ability of developing countries and least developed countries to engage in and maximize benefits from trade in environmental goods and services and how can these be addressed? (WTO, 2022b).

A high-level event at the end of 2022 will take stock of progress achieved and adopt a work plan towards the Thirteenth WTO Ministerial Conference.

Beyond TESSD, the topic of EGS has also arisen in the context of the Informal Dialogue on Plastics Pollution and Environmentally Sustainable Plastics Trade (IDP) initiated in November 2020 by a group of 16 WTO members. Discussions culminated in a ministerial statement, now co-sponsored by 71 WTO members, in which ministers agreed to hold dedicated discussions with a view to identify best practices and share experiences regarding “how to promote trade in goods and services including the use of technologies that can reduce plastic pollution.”<sup>3</sup> The statement also makes numerous references to promoting trade in environmentally sound waste management technologies, environmentally sustainable and effective substitutes and alternatives, and reused and recycled plastics.

At the WTO, discussions on EGS originally started in 2001 based on a mandate agreed at the Doha Ministerial Conference instructing members to negotiate the reduction or, as appropriate, elimination of tariff and non-tariff barriers in EGS. However, lack of agreement on the various fault lines and the overall stalling of the Doha round of trade negotiations meant that little advance was made on environmental goods negotiations after 2011. In 2014, this deadlock prompted a subgroup of 46 WTO members to launch a plurilateral initiative

for an Environmental Goods Agreement in the hope that discussions among a smaller set of like-minded countries could lead to consensus. The talks initially built on a 2012 decision by Asia-Pacific Economic Cooperation (APEC) economies to cut most-favoured-nation (MFN) tariffs voluntarily to 5% or less on 54 environmental goods.<sup>4</sup> Despite intensive talks, participants ultimately failed to reach consensus and the negotiations on an Environmental Goods Agreement have been inactive since December 2016.

In the meantime, exploratory discussions on environmental services have continued in the Council for Trade in Services meeting in the Special Session without prejudice to WTO members' negotiating positions. Such discussions have mostly focused on sharing domestic experiences and identifying relevant environmental services where improved multilateral commitments could significantly contribute to advancing global action on environmental issues.

In the absence of significant action at the multilateral level, attention has shifted to the bilateral and regional levels, with regional trade agreements (RTAs) becoming the preferred avenue to facilitate trade in EGS. According to a review by Monteiro (2016), out of 270 RTAs notified to the General Agreement on Tariffs and Trade (GATT) or the WTO between 1956 and May 2016, 129 included specific references to trade in environmental goods, services, and technologies. These agreements have not only gone beyond existing WTO commitments in a number of areas, they have also served as incubators for new approaches and laboratories to test new ideas. In an effort to draw lessons and avoid repeating past mistakes, several WTO members have highlighted the need to build on the experience of RTAs in facilitating and promoting trade in EGS and explore how this experience could inform discussions at the WTO.

As a contribution to these discussions, this technical paper reviews existing experiences and possible approaches to: (i) incorporating EGS-related provisions in trade agreements; (ii) defining the scope and coverage of EGS; and (iii)

3. Informal Dialogue on Plastics Pollution and Environmentally Sustainable Plastics Trade (IDP), Ministerial Statement on Plastics Pollution and Environmentally Sustainable Plastics Trade of 10 December 2021. WTO Doc. WT/MIN(21)/8/Rev.2 (2021a).

4. Approximately 300 possible candidates were subsequently identified for liberalization.



designing substantive provisions in areas such as market access commitments and non-tariff measures, including regulatory cooperation, subsidies, government procurement, and technical assistance among others. It does not profess to provide a comprehensive review of RTAs, nor does it attempt to assess the impact of such provisions on trade,

development, and the environment. Based on selected precedents from a range of agreements involving both developed and developing countries, the aim is rather to present a menu of options that WTO members could consider when exploring ways to facilitate and promote trade in EGS as envisaged in the TESSD and IDP initiatives.<sup>5</sup>

## 2. Approaches to EGS in Regional Trade Agreements

A review of existing RTAs reveals that governments have pursued a range of approaches to EGS. While EGS liberalization has been the subject of dedicated initiatives, such as the 2012 APEC voluntary commitment and the Agreement on Climate Change, Trade and Sustainability (ACCTS) negotiations,<sup>6</sup> EGS provisions are also incorporated among a wider range of disciplines that can usually be found under three main headings or sections.

First, measures aimed at promoting and facilitating trade in EGS can be introduced in horizontal RTA chapters. For example, a wide range of RTAs incorporate references to EGS in their chapters on trade and environment or trade and sustainable development.<sup>7</sup> These are usually commitments by the parties to cooperate and facilitate trade and investment in EGS. Out of the 129 RTAs identified as containing references to EGS in the Monteiro (2016) analysis of 270 RTAs, 26 referred to the promotion of trade in EGS, mostly through provisions under such horizontal chapters. Examples can be found in the Canada-European Union (EU) Comprehensive Economic and Trade Agreement (CETA),<sup>8</sup> in the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP),<sup>9</sup> and in the United States-Mexico-Canada Agreement (USMCA).<sup>10</sup>

Such provisions tend to be of an exhorting nature rather than hard obligations and are often excluded from the scope of the dispute settlement mechanism. EU RTAs, for example, tend to exclude the chapters on trade and sustainable development from the general

dispute settlement provisions of the agreements. Instead, they provide for an approach based on consultations and examination of the matter by panels of experts to monitor the implementation of the chapter and settle disputes. Such mechanisms usually involve dialogue with stakeholders and consultations with domestic advisory groups comprising a balanced representation of different interests (e.g. employers, workers, environmental groups, and private sector representatives). By contrast, US RTAs tend to put more emphasis on administrative and judicial proceedings, including the potential for sanctions and remedies. In cases of disagreement regarding implementation which cannot be solved through consultations, including at the level of ministers, environmental provisions are ultimately subject to the ordinary dispute settlement procedures of the US RTA. Beyond the legal implications, both approaches tend to have an impact on the type of commitments parties are willing to undertake. While a more legalistic approach provides enhanced predictability, parties may be more inclined to limit the scope of their commitments if EGS-related provisions are ultimately subject to dispute settlement.

Second, liberalization commitments on EGS can be integrated under the parties' individual schedules of commitments for goods and/or services. Environmental goods can either benefit from the general elimination of tariff barriers resulting from RTA negotiations (even if they are not explicitly singled out for specific treatment) or particular environmental goods may be explicitly noted for specific treatment. With respect to services, RTAs that opt for a "positive list" approach (i.e. that

5. Annex I summarizes the main options and their precedents listed in the paper.

6. The ACCTS negotiations involve New Zealand, Costa Rica, Fiji, Iceland, Norway, and Switzerland. For an overview see New Zealand Ministry of Foreign Affairs and Trade (n.d.).

7. Beyond trade and environment or trade and sustainable development chapters, EGS has also been referred to in other horizontal chapters dealing, for example, with subsidies and countervailing measures (e.g. Article 111(1) of the Caribbean Community and Common Market), government procurement (e.g. Article 12.8(6) of the Australia-Korea FTA), or innovation and intellectual property rights (e.g. Article 138 of the Economic Partnership Agreement between the CARIFORUM States and the European Community).

8. See Article 24.9.

9. See Article 20.18.

10. See Article 24.24.

apply market access and national treatment commitments only to modes and sectors where specific commitments are undertaken) tend to include enhanced liberalization commitments on environment-related services compared to the WTO (see section 4.1.2 below). RTAs that adopt a “top-down” or “negative list” approach (i.e. under which all services restrictions are removed unless specifically excluded from a party’s market access and national treatment commitments) provide further liberalization that is likely to cover a wider range of environment-related services even when these services are not explicitly singled out.

## 3. Scope and Coverage

### 3.1 Environmental Goods

A first practical challenge facing governments seeking to promote trade in environmental goods is to define what constitutes an environmental good. In the absence of a universally agreed definition, discussions in the WTO have centred around agreeing on a specific list based on member submissions.<sup>13</sup> A critical question in this process was whether to liberalize goods that exclusively or predominantly have environmental end-uses, or whether goods that have other non-environmental applications (such as pipes, for example, which can have both environmental and non-environmental applications) should be considered. In some cases, WTO members have proposed specific “ex-outs” under the World Custom Organization’s Harmonized Commodity Description and Coding System, generally referred to as the Harmonized System (HS), used to classify goods.<sup>14</sup> A related question has been whether to include products based on processes and production methods, such as organic products for example. A practical challenge facing proposals to include such products has been the absence of universally accepted

Third, certain RTAs contain EGS-related provisions in sectoral chapters or annexes dedicated to a specific kind of technology or a particular environmental concern. Sectoral chapters include, for example, those dealing with non-tariff barriers to trade and investment in renewable energy generation under the EU-Singapore and the EU-Vietnam free trade agreements (FTAs). The CPTPP has also a specific annex dealing with organic products.<sup>11</sup> Similarly, the USMCA contains a dedicated annex to its chapter on technical barriers to trade dealing with energy performance standards.<sup>12</sup> Contrary to the horizontal chapters mentioned above, these sectoral chapters or annexes include special commitments or rules that apply exclusively to a well-defined subset of products, technologies, or regulatory measures.

certification systems to differentiate goods based on their environmental impact at the production stage (UNEP, 2018).

In discussions at the WTO, some members, notably India and Argentina, have expressed concern that the lists of goods put forward, largely by developed countries, contained a number of “dual-use” products with limited environmental credentials. They were also concerned about protecting policy space for their industrial sector that would be affected by broad-based tariff liberalization. Instead, they proposed to waive tariffs on a time-bound basis only for goods and services destined for approved environmental projects (“the project approach.”). However, the “project approach” did not find favour with the proponents of the “list approach” due to the lack of permanent or binding liberalization, complex procedures to manage trade opening, and because of what the latter regarded as inconsistency with WTO rules on non-discrimination. Finally, there were also divergences over the type of special and differential treatment that would apply

11. See CPTPP Annex 8-G.

12. See USMCA Annex 12 D.

13. A consolidated set of 411 products under HS (see abbreviations) subheadings submitted by various WTO members was compiled by the WTO Secretariat in 2005 (WTO, 2005). Following feedback from members in April 2007, Canada, the EU, Japan, the Republic of Korea, New Zealand, Norway, Chinese Taipei, Switzerland, and the US jointly submitted a proposal containing a revised list of environmental goods under 153 6-digit HS subheadings termed as a “potential convergence set” of products (WTO, 2007). In March 2011, Australia, Colombia, Norway, Hong Kong, and Singapore proposed a list of 26 products drawn from the WTO “combined” list of 411 products—combining six different lists submitted by developed countries (plus the Philippines) as a starting point for discussions towards a “credible core-list” of environmental goods (Balineau & De Melo, 2011). However, the proposal was not extensively discussed or assessed by WTO members (Dupuy & Viñuales, 2013).

14. While HS codes are harmonized internationally up to subheadings at the 6-digit level, further detailed specifications at the 8, 10, or 12-digit level are usually found in national classifications. “Ex-outs” are additional product specifications that go beyond the HS-6 digit level and that are harmonized across countries. The code “EX” is used in tariff schedules and in WTO databases to reflect the fact that a narrowly defined product (tariff line) is further subdivided because it has two or more duties. For example, Japan has proposed “Refuse disposal vehicles” under the broader 6-digit subheading HS 870590.

to developing countries, with some WTO members calling for exemptions on sensitive goods, longer tariff phase-out periods, and lower levels of tariff cuts (UNEP, 2018).

The challenge of defining the scope and coverage of environmental goods is reduced in RTAs that consider ambitious trade liberalization across the board. In this case, all goods, regardless of their environmental nature, are gradually liberalized, which makes an agreed definition of environmental goods unnecessary. For RTAs that identify environmental goods, however, the favoured approach is to agree on a specific list. Three examples of such lists, briefly discussed below, include the 2012 APEC voluntary commitment, the Agreement between New Zealand and the Separate Customs Territory of Taiwan, Penghu, Kinmen, and Matsu on Economic Cooperation (ANZTEC), and the more recent New Zealand-United Kingdom (UK) FTA.

### *APEC Voluntary Commitment*

On 9 September 2012, 21 APEC leaders meeting in Vladivostok agreed to voluntarily reduce applied tariffs on 54 environmental goods.<sup>15</sup> The list was developed following the commitment, adopted in 2011, to reduce applied tariffs to 5% or less by the end of 2015, taking into account members' economic circumstances and without prejudice to APEC member positions in the WTO (APEC, 2012). During the negotiations, differences arose on the issue of product

coverage and the inclusion of certain sensitive items. However, members generally took a pragmatic stance and did not attempt to debate definitional issues around environmental goods, preferring instead to agree on a list of subheadings acceptable to all members (Vossenaar, 2013). Members also proposed examples of ex-outs under the relevant HS 6-digit subheadings.<sup>16</sup>

For example, trash and waste presses have been proposed as an ex-out under the much broader 6-digit subheading HS 87989. In some cases, ex-outs have been proposed by specific APEC members whereas in other cases (e.g. heliostats under HS 901380) the ex-outs are not accompanied by any specific APEC member name in brackets, implying their general acceptance. In other cases (discussed below), some members have also included specific exclusions in the ex-out column using the term "except", implying that these excluded products would not be affected by tariff cuts.

Table 1 lists the broad environmental product categories that capture the 54 environmental goods included in the APEC list. It shows that while the main categories of environmental goods discussed under the WTO Doha round of trade negotiations are included, certain categories like renewable energy are better represented (with 15 product subheadings) compared to environmentally preferable products (with only one subheading).<sup>17</sup>

**Table 1. Environmental Categories for Products Included in the APEC List**

Category	No of product subheadings
Renewable energy	15
Environmental monitoring, analysis, and assessment equipment	17
Environmental protection*	21
Environmentally preferable products**	1
<b>Total</b>	<b>54</b>

\* Principally solid waste management, wastewater management, and air pollution control.

\*\* The only ex-out under this category that was listed is Other Assembled Flooring Panels, Multilayer, of Bamboo.

Source: Vossenaar (2013) and Sugathan (2013).

- The "environmental goods" on the APEC list fall under 54 HS subheadings. This can be confusing because these subheadings include more narrowly defined "environmental goods" (ex-outs). Trade figures based on 6-digit HS codes tend to significantly overestimate trade in "environmental goods" that may benefit from tariff reductions (Vossenaar, 2013).
- The ex-outs inserted in Annex C seem to be a mixture of: (i) product specifications listed by APEC economies that apply tariffs of more than 5% with a view to limiting the scope of any tariff reduction to only part of a 6-digit HS subheading tariff item (i.e. a "defensive approach") and (ii) product specifications listed by APEC economies that already comply with the APEC pledge but would like to see other APEC economies implement voluntary tariff reductions (i.e. an "offensive approach"). Many of the ex-outs included in Annex C are labelled "optional" and seem to be intended to assist other APEC economies in identifying products (within the 54 6-digit HS codes) for which they could agree to voluntarily reduce tariffs that are more than 5% (Vossenaar, 2013).
- These categories are based on those used by the WTO Secretariat in their informal note synthesizing EGS submissions made by WTO members under the Doha Round as of 17 November 2005 (WTO, 2005).

Two new goods included in the APEC list that were not previously proposed under the Doha round are (i) optical devices, appliances, and instruments and (ii) parts of optical devices, appliances, and instruments. Specific ex-outs proposed under the second item include solar heliostats and their parts, which are used in the production of solar thermal power. Another notable aspect of product coverage under the APEC list is that a value chain approach has not been adopted. For instance, steam turbine parts have been included but steam turbines themselves are excluded. In the case of wind energy, the main turbine and related parts are included while other important inputs in the wind energy value chain like ball bearings are excluded.<sup>18</sup> APEC ministers responsible for trade are also considering an instruction to officials to update the list and also identify environmental services that could be added (Kuriyama, 2021; APEC, 2021).

### **ANTZEC**

ANZTEC entered into force on 1 December 2013. Parties recognize under the agreement that “facilitating trade in environmental goods and services through elimination of tariff and non-tariff barriers can enhance economic performance and address global environmental challenges including climate change; natural resources protection; water, soil and air pollution; management of waste and waste water; and depletion of the ozone layer” (New Zealand Commerce and Industry Office, 2013). The agreement is one of the few FTAs that also includes a separate annex (Annex 7) containing a stand-alone list of environmental goods (132 goods) on which tariffs are to be eliminated upon entry into force. The agreement broadly defines environmental goods as “those which positively contribute to the green growth and sustainable development objectives of the parties” (New Zealand Commerce and Industry Office, 2013c, Article 3 sub-paragraph 2(a)).

A review of the list reveals that most of the categories—e.g. renewable energy, air pollution control, solid waste management, wastewater treatment—previously discussed

as part of the WTO Doha round of trade negotiations are covered. All of the HS subheadings from the APEC list are also included. A notable exception is that floor panels of bamboo and the broad category of environmentally preferable products is missing. In addition, while electric accumulators (used in energy storage and transport) are included, electric vehicles are excluded. However, bicycles and their parts (which were controversial under the plurilateral Environmental Goods Agreement negotiations) have been included. Similarly, gas turbines and their parts (which have also been controversial given their use of fossil fuels) have been included. Many of the HS subheadings listed in Annex 7 have more specific ex-out examples listed in a separate column. However, from the perspective of tariff implementation this is largely symbolic as the tariff cut applies to the entire HS subheading. It nonetheless serves to provide some clarity on the type of environmental goods covered by a specific HS 6-digit subheading (which may often include goods that have non-environmental purposes).

### **New Zealand-UK FTA**

Less than two years after the launch of negotiations, the New Zealand-UK FTA was signed on 28 February 2022.<sup>19</sup> The agreement sets a precedent by including the most comprehensive list of HS subheadings containing environmental goods (“Environmental Goods List”) in an FTA to date. Article 22.7 of Chapter 22 provides for the immediate elimination of all import tariffs at the 6-digit level of 293 HS subheadings containing environmental goods listed in Annex 22A. Article 22.7 also provides for the Environment and Climate Change Sub-Committee, established as part of the institutional provisions of the agreement, to keep the list under review and make recommendations to the Joint Committee for modifications (UK Government, n.d.-a; Hay, 2022).<sup>20</sup>

The list contains 3 columns. The first indicates the HS 6-digit subheading, the second indicates ex-out specifications (if any), and the third is for the parties to enter remarks on the environmental benefit of the proposed HS subheading or

18. This could be related to concerns over non-environmental end-uses since only a very small share of overall trade in ball bearings is driven by wind energy deployment (Sugathan & Brewer, 2012).

19. The agreement is awaiting approval from both parliaments before it enters into force, which is expected by end 2022 (Hay, 2022).

20. This would be based on factors that include: the extent to which a good contributes to the “clean growth” and sustainable development objectives of the parties; advances in available technologies; any potential dual-use of proposed environmental goods; relevant multilateral or plurilateral developments; and other environmental and climate factors (UK Government, 2022c).

ex-out. As with the ANZTEC agreement, the inclusion of the ex-out column is mostly symbolic as import duties are to be liberalized for the entire subheading (see section 4.1 below).

In terms of coverage, most of the major categories discussed under the Doha round have been included. A significant inclusion, for the first time, is HS 060290 comprising live plants including their roots and mushroom spawn, which fall under Chapter 6 of the HS.<sup>21</sup> These have been justified on the basis of promoting regrowth and biodiversity of plant life for local agriculture. Additionally, a number of HS codes under Chapter 44 (Wood and articles of wood; wood charcoal) have also been included with the environmental benefits column specifying that “sustainably sourced wood-based construction materials provide an environmentally preferable alternative to more carbon-intensive construction materials due to the natural, renewable and biodegradable nature of wood” (UK Government, 2022d).<sup>22</sup> A number of articles of paper and paperboard as well as natural plant and animal-based fibres like wool, flax, jute, cotton, coir, and abaca and their articles are also included. Further, electric vehicles, bicycles and parts, electric locomotives, and catalysers for the production of hydrogen are some of the other noteworthy products included on the list. Finally, various other components related to wind energy such as ball bearings and spherical roller bearings that are not in the APEC and ANZTEC lists are included.

## 3.2 Environmental Services

As with environmental goods, a core challenge for discussions on promoting and facilitating trade in environmental services is to define what those services involve. The environmental

services sector is not a homogeneous or clearly defined one. It is also rapidly evolving. In 1991, a first attempt at classifying services in the United Nations—known as the provisional Central Product Classification (CPC prov.)—identified seven types of environmental services covering mostly infrastructure services for liquid or solid waste management.<sup>23</sup> This early effort served as a basis to develop the services sectoral classification used in the WTO, known as document MTN.GNS/W/120 and usually referred to as “W/120”.<sup>24</sup> This classification serves as a common reference to describe the liberalization commitments undertaken by members in WTO negotiations or in RTAs. Since the early 90s, the CPC has gone through a number of revisions. In its latest iteration—version 2.1 version August 2015—environmental services are grouped under Division 94, which provides a more disaggregated set of services yet still focuses mainly on the collection, treatment, or disposal of liquid or solid wastes.<sup>25</sup>

According to a range of experts and government officials alike, this classification remains too narrowly defined (Sauvage & Timiliotis, 2017; Jacob & Møller, 2017; De Melo & Vijil, 2014). In particular, it fails to reflect the evolution of the sector, which has grown from a niche activity focused on abatement of industrial emissions to a rapidly expanding industry covering a wide range of services ranging from the prevention or control of environmental problems to services associated with the design, research and development, construction, assembly, maintenance, and repair of clean energy facilities (APEC, 2017). This evolution has been driven largely by the rise in environmental regulations and growing public awareness of environmental challenges. It has also been facilitated by technological innovation and digitalization, thanks to which many services have become tradable (WTO, 2018).<sup>26</sup> In

21. Chapter 6 includes live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage.

22. However, given that the subheadings included do not differentiate between sustainably and non-sustainably sourced wood, it will be difficult to provide preferential treatment to sustainably sourced wood absent some form of certification accepted by both the UK and New Zealand.

23. These included sewage services (94010); refuse disposal services (94020); sanitation services (94030); cleaning of exhaust gases (94049); noise abatement service (94050); nature and landscape protection services (94060); and other environmental protection services (94090)

24. These categories were reflected in section 6 of the WTO W/120 list which groups environmental services under four main sub-headings, namely 6.A.: Sewage services; 6.B.: Refuse disposal services; 6.C.: Sanitation services; and 6.D.: Other, generally interpreted as comprising the remaining elements of the CPC’s environmental services category, namely the cleaning of exhaust gases, noise abatement services, nature and landscape protection services and other environmental protection services not elsewhere classified (WTO, 1991).

25. Division 94 comprises services such as wastewater treatment (CPC 941), the collection and management of hazardous and non-hazardous waste (CPC 942-943), remediation and clean up services (CPC 944), sanitation and similar services (CPC 945), and other environmental protection services not elsewhere specified (CPC 949) (UN, 2015).

26. For example, progress in information technologies now allows for the remote monitoring of wind turbines and solar installations by a firm located in a third country.

practice, these services are often directly associated with certain environmental technologies or sold as a package with specific environmental goods. Many services are also directly associated with specific business models such as those aimed at facilitating a transition to a more resource efficient and circular economy (e.g. design services, recycling services, and repair and remanufacturing services).

Governments interested in fostering trade in services with credible environmental purposes are thus confronted with the challenge of defining what other services should be included in the list beyond those contained in Division 94 of the CPC. While certain services have a clear and unequivocal environmental purpose, others may serve different purposes depending on the sector. The same maintenance services, for example, could be applied both to clean energy facilities or highly polluting installations. Therefore, a first step in identifying environmentally relevant services is to list those services that have clear environmental purposes outside Division 94.

Table 2 provides examples of such services for illustrative purposes. This approach is also reflected in the Reference List of Environmental and Environmentally Related Services endorsed by APEC Ministers in 2021, which combines services at the 5-digit level in and beyond CPC Division 94 (APEC, n.d.).

For many end-use services, however, the situation is more challenging (Bellmann & Bulatnikova, 2022). Several approaches to identify environmental services have been explored in regional deliberations. As mentioned in the previous section, a straightforward option is simply to adopt a top-down approach by removing all restrictions to services trade except for clearly defined sectors or modes of delivery. This approach, often used in modern FTAs,<sup>27</sup> is similar to that applied in goods. By favouring a broad coverage of services, it arguably encompasses all environmental aspects of services trade without having to define them specifically.

**Table 2. Examples of Services with a Clear Environmental Purpose Beyond CPC Division 94**

Division	Subclass	CPC 2.1 Code
Construction (53)	Sewage and water treatment plants	53253
Construction services (54)	General construction services of irrigation and flood control waterworks	54234
	General construction services of sewage and water treatment plants	54253
	Water well drilling services	54341
	Septic system installation services	54342
	Insulation services	54650
Professional, technical and business services (83)	Engineering services for waste management projects (hazardous and non-hazardous)	83326
	Engineering services for water, sewerage and drainage projects	83327
	Geophysical services	83412
	Composition and purity testing and analysis services	83441
	Testing and analysis services of physical properties	83442
	Environmental consulting services	83931
Other manufacturing services; publishing, printing and reproduction services; materials recovery services (89)	Metal waste and scrap recovery (recycling) services, on a fee or contract basis	89410
	Non-metal waste and scrap recovery (recycling) services, on a fee or contract basis	89420
Services of membership organizations (95)	Services furnished by environmental advocacy groups	95992
Recreational, cultural and sporting services (96)	Nature reserve services including wildlife preservation services	96422

27. According to author communication with the APEC Secretariat, for example, by the end of 2019, 71 FTAs signed by at least one APEC economy included services commitments using a negative list approach, while 55 FTAs used a positive list approach and 3 FTAs used a mixed approach.

However, this approach also removes barriers on a range of services that could be politically sensitive for certain members or result in unintended environmental consequences. In the absence of proper regulations, liberalization may provoke or exacerbate existing environmental challenges or affect the quality of the services provided.<sup>28</sup> Moreover, liberalizing services with non-environmental end uses can also have benefits. For example, ensuring efficient maintenance services remains essential from an environmental perspective even when applied to oil pipelines and not only when applied to wind and solar energy.

A second approach is to build synergies with environmental goods by facilitating trade in services directly related to specific products or environmentally sound technologies. This is the approach taken, for example, in ANZTEC, which defines environmental services as those “directly related to the investment, sale, delivery or installation of” a set of 132 environmental goods listed in the agreement and front loaded for trade liberalization.<sup>29</sup> This approach could arguably cover a wider range of services beyond Division 94, including some dual-use services (e.g. assembly, installation, testing and analysis, maintenance and repair, and research and development services), when these services are traded in relation to a defined list of goods (Bellmann & Bulatnikova, 2022).

In practice, the challenge remains to reach consensus on a well circumscribed list of goods. If this proves too difficult, an alternative avenue could be to link services to specific environmentally sound technologies, which could be easier to identify compared to specific product codes under the HS. The approach might also involve implementation challenges and place a significant burden on businesses who would have to demonstrate that the delivery of services is related to a particular set of goods or technologies. These could be

attenuated either by limiting the scope of the commitments to certain modes of supply or by making the commitment voluntary. In Chapter 17 of ANZTEC, for example, the obligation on the services associated with the 132 environmental goods is limited to facilitating “the movement of business persons involved in the sale, delivery or installation of environmental goods or the supply of environmental services.”

A third approach could be to identify specific services that are relevant to the environment within subclasses of the CPC 2.1 classification at the 5-digit level through the use of ex-outs (Bellmann & Bulatnikova, 2022). As described above, this approach has been discussed abundantly in the context of environmental goods when exploring options to identify goods beyond the 6-digit level in the HS. The main idea here is to further differentiate services within specific subclasses and limit the scope of liberalization commitments to the environmental dimension of those services. Table 3 provides a few examples of environmentally relevant services at the CPC 2.1 5-digit level. The specification in brackets indicates the sub-set of services that are environmentally relevant within the broader category.

While this approach has never been tested in any RTA, it has been discussed in regional deliberations and reflected in the final APEC Reference List of Environmental and Environmentally Related Services to identify services which may be environmentally related under certain conditions (APEC, n.d.). Although this reference list does not imply any particular commitment on the part of APEC economies, it constitutes a step forward in addressing the dual-use concern expressed by some countries and could serve as a reference in other bilateral, regional, or multilateral initiatives beyond APEC.

28. Examples include pollution or ecosystem degradation resulting from unregulated tourism or opening markets for infrastructural services such as water distribution, without proper regulations on universal access or quality (Geloso Grosso, 2007).

29. See Chapter 17, Article 3.

Table 3. Examples of Environmental Services Identified Through Ex Outs

Division	Subclass	CPC 2.1
Construction services (54)	General construction services of dams [ <b>Hydro-electric dams</b> ]	54233 ex
	General construction services of power plants [ <b>Plants powered by renewable energy</b> ]	54262 ex
Rental services of transport vehicles with operators (66)	Rental services of road vehicles with operators [ <b>for electric vehicles</b> ]	6601 ex
Leasing or rental services without operator (73)	Leasing or rental services concerning cars and light vans without operator [ <b>for electric vehicles</b> ]	73111 ex
	Leasing or rental services concerning pleasure and leisure equipment [ <b>for bicycles</b> ]	73240 ex
Professional, technical and business services (83)	Information technology (IT) consulting and support services [ <b>for environmental monitoring or analysis</b> ]	8313 ex
	Information technology (IT) design and development services [ <b>for environmental monitoring or analysis</b> ]	8314 ex
	Architectural services and advisory services [ <b>climatic and environmental analysis</b> ]	8321 ex
	Engineering services for power projects [ <b>Power projects based on renewable energy</b> ]	83324 ex
	Engineering services for other projects [ <b>contamination studies and quality management</b> ]	83329 ex
Support and operation services to agriculture, hunting, forestry, fishing, mining and utilities (86)	Support and operation services to forestry and logging [ <b>sustainable management</b> ]	8614 ex
	Support and operation services to fishing [ <b>sustainable resource management</b> ]	8615 ex
Maintenance, repair and installation (except construction) services (87)	Maintenance and repair services of electrical machinery and apparatus n.e.c. [ <b>Maintenance and repair of generators powered by renewable energy and smart grids</b> ]	87152 ex
	Installation services of professional medical machinery and equipment, and precisions and optical instruments [ <b>Precision and optical instruments used for environmental monitoring or analysis</b> ]	87350 ex
	Installation services of electrical machinery and apparatus n.e.c. [ <b>installation of generators powered by renewable energy and smart grids</b> ]	87360 ex

Source: Based on Kyvik Nordås and Steenblik (2021).

## 4. Substantive Provisions

### 4.1 Market Access Commitments

#### 4.1.1 Market Access in Environmental Goods

Beyond definitional concerns, RTAs incorporating provisions on environmental goods have taken different approaches to trade liberalization. In most RTAs, liberalization extends across the board, only exempting certain sensitive products or providing for longer phase-out periods. In contrast, some initiatives only contemplate voluntary commitments on a limited set

of products. In between, several options can be envisaged including front-loading a list of specific products for faster trade liberalization or conditioning market access commitments to a demonstration that particular goods have been produced in an environmentally sound way.

#### *Voluntary Reduction or Elimination of Tariffs*

The APEC initiative on tariff reduction for environmental goods is the only existing example of a regional or plurilateral



voluntary liberalization initiative on environmental goods. In the Seoul APEC Declaration of 1991, APEC adopted the principle of open regionalism, namely trade liberalization among member economies without asking for reciprocity from non-members (Han & Cheong, 1998). This implies that any outcome from liberalization initiatives are extended on an MFN basis to all WTO members, unlike other RTAs or FTAs that are “closed” (i.e. where reductions in trade barriers are not extended to countries or economies external to the agreement).

The 2012 Vladivostok Declaration that launched APEC’s initiative stated that applied tariffs would be reduced to 5% or less by the end of 2015. The minimum compliance for APEC economies was thus set at 5% and tariff lines under each of the listed 54 subheadings were to be selected by the economies at their discretion. Analysis by Vossenaar (2013) revealed that in 2013, APEC economies collectively had more than 500 tariff lines with applied tariffs of over 5%. However, it was unclear as to which ex-outs or tariff lines they would choose to apply the tariff reduction commitments. In some cases, ex-outs may have been included by APEC member economies merely for illustrative purposes. In other cases, APEC economies have also mentioned exclusions under the ex-out column, signifying that they would not be subject to the tariff reduction commitment. For example, Australia has excluded machines and mechanical appliances used as components in motor vehicles under HS 847990 (parts of machines and mechanical appliances under 84.79).

For a number of tariff lines, the depth of tariff cut was greater for economies such as China or the Republic of Korea which had higher applied tariffs on average compared to other APEC economies like Australia, Hong Kong-China, Japan, New Zealand, and Singapore which did not apply any tariff of over 5% at the time of the APEC mandate (Vossenaar, 2013). The pre-existing level of applied MFN tariffs therefore provides a useful basis to ascertain the effort a country would need to make under any environmental goods initiative, whether regional, plurilateral, or multilateral, and the value of additional trade flows that would arise as a result. The lower the level of prevalent MFN applied rates, the easier it could be for countries to participate in and undertake a binding reduction or elimination of import tariffs as part of a more formal liberalization exercise on environmental goods.

### *Liberalization of Goods Across the Board With a Separate Reference or Annex Schedule Mentioning Environmental Goods*

For certain specific FTAs, even though all goods are ultimately liberalized across the board, parties have still established a separate or stand-alone annex containing a list of environmental goods together with the HS subheadings and additional columns designating ex-outs and environmental benefits. These lists are mainly a reference to the environmental goods that are captured under the FTA and provide for immediate liberalization of these goods. The actual liberalization modalities (i.e. tariff cuts) for these goods are included within the overall tariff liberalization schedule for goods. Under this approach, it is possible to front-load the liberalization of certain goods, even if, in practice, most agreements that take this approach also liberalize other goods immediately.

The ANZTEC agreement is a good example of an agreement with a defined list of environmental goods but no real front-loading. The vast majority of goods are liberalized across the board upon entry into force of the agreement. The only two exceptions. First, Taiwan’s schedules for deer velvet and liquid milk are subject to tariff rate quotas. Second, New Zealand has a few tariff lines (at the 8-digit level) related to textile articles, including those made of wool, cotton and synthetic materials, glass vessels, iron and non-alloy steel rods, bars and wires, where duties are to be phased out and eliminated in the fourth year after entry into force of the FTA (New Zealand Commerce and Industry Office, 2013b).

The New Zealand-UK agreement also adopts an across-the-board approach to liberalization for all environmental goods, as with most other products. The UK has adopted a phased tariff reduction approach and tariff quotas only for agricultural tariff lines and some industrial tariff lines (mainly articles of titanium) (UK Government, 2022b). However, the New Zealand-UK FTA, in Article 2.6, provides for accelerating the elimination of customs duties on originating goods as set out by both parties in their tariff schedules. Such elimination is to be based on mutual consultations. It also requires both parties to exchange written notifications regarding completion of the necessary internal legal procedures to give effect to their agreement. However, either party can decide to voluntarily accelerate the elimination of customs duties imposed on originating goods of the other party,

with information on the new rates of customs duties given as early as is practicable.

### ***Preferential Treatment for Environmental Goods or Environmentally Preferable Products Including Through the Use of Tariff Rate Quotas***

Another approach is to limit market access concessions to goods that comply with specific sustainability requirements. This approach is not widely implemented in existing RTAs, but precedents exist. For example, the Comprehensive Economic Partnership Agreement (CEPA) between the European Free Trade Association (EFTA) and Indonesia provides for preferential tariff rate quota access for a specific sustainably produced product. Under the agreement, which entered into force on 1 November 2021, Switzerland has granted better market access to Indonesia through bilateral quotas, with reduced tariffs restricted to sustainably produced palm oil for up to 12,500 tonnes a year. The producer is required to submit proof of sustainable production. The Swiss Federal Council also introduced an ordinance specifying which certification systems provide valid proof of sustainable and traceable palm oil production and what control mechanisms are envisaged. This ordinance entered into force at the same time as CEPA.<sup>30</sup> Preferential imports falling under the quotas also have to be shipped in 22-tonne tanks to ensure supply chain traceability with regard to the origin of the palm oil (EFTA, n.d.).

#### **4.1.2 Market Access and National Treatment Commitments for Services**

As previously indicated, RTAs that adopt a negative list approach remove restrictions on all service sectors unless specifically excluded from a member's market access and national treatment commitments. By contrast, RTAs that adopt a positive list approach only liberalize trade in service sectors that a member has inscribed in its schedule of commitments, and only when no

limitations have been listed.<sup>31</sup> This approach provides significant flexibility in the commitments undertaken by members and allows each country to design an individualized set of obligations in accordance with national specificities. In turn, these commitments ensure a minimum level of access and non-discriminatory conditions for foreign service providers. However, they do not prevent the importing party from applying a more favourable treatment than the minimum guaranteed under the agreement.

In comparison to commitments taken under the WTO, the market access and national treatment commitments undertaken in RTAs on environmental services are significantly deeper and broader in scope. According to a review conducted by Monteiro (2016), out of 270 RTAs notified to the GATT or WTO between 1956 and 2016, 101 contained specific commitments in environmental services. These cover services under Division 94 and also other environment-related services. For example, recycling services under Division 89 are fully opened in the schedule on liberalization for establishment commitments in the EU-Singapore, EU-Korea, and EU-Vietnam agreements.

In some cases, trade liberalization is limited to certain modes of supply.<sup>32</sup> For example, under Chapter 17, Article 3.2.(b) of ANZTEC, the obligation to facilitate trade in services associated with a predefined set of 132 environmental goods identified in the agreement is limited to facilitating "the movement of business persons involved in the sale, delivery or installation of environmental goods or the supply of environmental services." Certain commitments in RTAs also envisage specific limitations for environmental reasons applied either horizontally to all sectors or to specific environment-related services by listing a range of non-conforming measures (Bellmann & Bulatnikova, 2022). For example, under the EU-UK agreement, Slovakia imposes a residency requirement for the processing and recycling of used batteries and accumulators, waste oils, old cars, and waste from electrical and electronic equipment. Similarly, in the EU-Japan

30. Preferential imports falling under the quotas also have to be shipped in 22-tonne tanks to ensure supply chain traceability with regard to the origin of the palm oil (EFTA, n.d.).

31. Market access commitments in services trade essentially deal with limitations on the number, volume, or value of services to be exported, the number of natural persons that may be employed, the type of legal entity through which a service is supplied, or limitations on the participation of foreign capital. By contrast, national treatment commitments are an obligation to accord to foreign services and foreign services providers a treatment no less favourable than the one accorded to domestic like services and service providers.

32. Modes of supply refers to the way in which services are trade internationally. The WTO General Agreement on Trade in Services (GATS) recognizes four modes of supply: from the territory of one member into the territory of any other member (Mode 1 — Cross border trade); in the territory of one member to the service consumer of any other member (Mode 2 — Consumption abroad); by a service supplier of one member, through commercial presence, in the territory of any other member (Mode 3 — Commercial presence); and by a service supplier of one member, through the presence of natural persons of a member in the territory of any other member (Mode 4 — Presence of natural persons) (WTO, n.d.-c).

agreement, services of basic geological, geodetic, and mining consulting as well as related environmental protection consulting services in the territory of Croatia can be carried out only jointly with or through domestic legal persons.

## 4.2 General Cooperation on EGS

A number of RTAs have general non-binding provisions that provide for cooperation and technical assistance on the promotion of trade and investment in environmental goods, including trade facilitation. As mentioned, most of these provisions are found in chapters that deal with trade and environment or trade and sustainable development. Some examples of these “best endeavour” cooperation provisions are illustrated in Annex I. The typology of these cooperation-related initiatives includes provisions on: (i) general commitments to facilitate and promote trade in EGS;<sup>33</sup> (ii) cooperative or joint projects on EGS;<sup>34</sup> (iii) commitments to identify an EGS list of mutual interest;<sup>35</sup> and (iv) agreement to promote trade in goods that contribute to environmentally sound practices (including goods that are the subject of voluntary sustainability assurance schemes such as fair and ethical trade schemes, eco-labels, and certification schemes for natural resource-based products).<sup>36</sup> There are also examples of provisions that facilitate trade in EGS by addressing non-tariff barriers identified by either party,<sup>37</sup> or by facilitating the movement of business persons involved in the sale, delivery, or installation of environmental goods or the supply of environmental services.<sup>38</sup>

Finally, OECD analysis of the treatment of environment and investment-related provisions in RTAs (excluding bilateral investment treaties and other international investment agreements) has revealed various types of environmental provisions related to investment within these agreements, but observed that these did not cover EGS specifically except in certain cases.

Instead, most RTAs had general language on trade and investment promotion in EGS, environmental protection, and safeguards including preservation of “policy space on environmental regulation” (Yamaguchi, 2020b).

In addition, some investment agreements also contain provisions aimed at encouraging investment in EGS specifically. For example, Article 6(b) of Sub-Section 2 on Investment and Environment in the EU-China Comprehensive Agreement on Investment states that parties shall “promote and facilitate investment of relevance for climate change mitigation and adaptation; including investment concerning climate friendly goods and services, such as renewable energy, low-carbon technologies and energy efficient products and services, and by adopting policy frameworks conducive to deployment of climate-friendly technologies.”

The relevance of investment policy and facilitation measures—including possible provisions in trade agreements—to promoting and facilitating investment and trade in environmental goods and services has been noted as worthy of further attention (Yamaguchi, 2020b). Options could include provisions to facilitate cooperation on environmentally supportive investment and as well as assistance, capacity building, and cooperation among investment promotion agencies in host and home countries.<sup>39</sup>

## 4.3 Sectoral Approaches on Regulatory Cooperation and Good Regulatory Practices

As tariff barriers are progressively reduced, non-tariff measures and particularly technical barriers to trade, such as technical regulations, standards, and conformity assessment procedures, are becoming increasingly relevant. According to the WTO environmental

33. See for example Article 16.12(c) EU-Japan FTA; Article 275.5(a). of the EU, Colombia, and Peru FTA; Article 405 of the EU-UK FTA, and Article 22.6 and Article 22.7.3 of the New Zealand-UK FTA. In the case of the EU-Singapore FTA, Article 12.11.2 obliges the party to pay special attention in this regard to climate-friendly goods and services, such as sustainable renewable energy goods and related services and energy efficient products and services.

34. See for example Article 24.24.4 of USMCA that provides for projects addressing current and future global environmental challenges and Article which 4.3 provides for cross-cutting cooperative activities that would also apply to EGS including development of collaborative projects or demonstrations.

35. See for example Article 19.4 of the Korea-Peru FTA.

36. See for example EU-Moldova and EU-Georgia FTAs.

37. See for example Article 3.2(c) of the New Zealand-Taiwan FTA and Article 22.7.2(b) of the New Zealand-UK FTA.

38. See Article 3.2(b) of the New Zealand-Taiwan FTA.

39. One example for relevant provisions is Chapter 7 (Investment and private sector support) found in the Cotonou Agreement between the European Union and the African, Caribbean and Pacific (ACP) Group of States, although this agreement does not have specific references to green investment (Yamaguchi, 2020b; European Communities, 2000).

database (WTO, n.d.-d), nearly two thirds of all environment-related trade measures notified at the WTO between 2009 and 2021 fall under the Agreement on Technical Barriers to Trade. In the environmental field, such measures often represent critical policy tools for governments to advance a variety of public policy objectives, as illustrated by regulations and standards dealing with energy efficiency requirements, levels of recyclability, pesticide residues, or emissions on motor vehicles for example.

From a trade perspective, divergences in those standards and regulations across jurisdictions create additional compliance costs, which can be particularly problematic for small and medium-sized enterprises. Examples include the need to gather information on existing requirements, adjust the specification of goods to comply with those requirements, or undertake multiple conformity assessments to prove compliance (OECD, 2017). In EGS, variations in technical regulations and conformity assessment procedures are considered to be some of the key obstacles to trade (Steenblik & Kim, 2009). From an environmental perspective, the divergent nature of standards and regulations can also slow down the scaling up of environmental solutions. For example, it is estimated that if minimum energy performance requirements were harmonized worldwide based on the highest requirements currently in place, global greenhouse gas emissions would be reduced by 7% by 2030 (European Union, 2015).

These considerations provide a strong rationale for harmonization, mutual recognition, or at a minimum enhanced cooperation in the design and implementation of environmental standards and regulations. Such design and implementation should meaningfully respond to environmental challenges and strengthen overall environmental performance while also being sensitive to differences in circumstances, priorities, perspectives, and capacity among countries. In recent years, RTAs have been used as vehicles to address this issue through dedicated provisions in chapters dealing with technical barriers to trade, but also good regulatory practices and international regulatory cooperation applied to goods and services.<sup>40</sup> These provisions usually promote enhanced coordination among parties in the

design, development, enforcement, or assessment of their regulatory measures. While many such provisions do not refer specifically to the environment and apply to both environmental and non-environmental goods and services, several RTAs have established specific disciplines aimed at facilitating trade in EGS. For example, some RTAs include a general commitment to apply good regulatory principles to the design of standards and regulations relating to EGS as in Chapter 17, Article 3.2 of ANZTEC. Others integrate specific provisions on regulatory cooperation or good regulatory practices in sectoral chapters or annexes dealing with particular environmental challenges.<sup>41</sup>

These provisions include commitments to harmonize existing standards or test procedures over a certain period of time. In practice, however, harmonizing regulations between parties presupposes a high level of economic integration and trust among regulators. It also requires the existence of relatively similar regulations to build on. An easier and slightly less ambitious approach is to encourage mutual recognition and equivalence of regulations. The more targeted option of a mutual recognition agreement for conformity assessment procedures—which is limited to accepting accredited test, inspection reports, or certificates of compliance issued in the exporting country—represents another form of regulatory cooperation.

Other RTAs encourage harmonization by requiring members to use relevant international standards as the basis for their technical regulations and conformity assessment procedures (except when these standards are either ineffective or unsuitable to achieving legitimate policy objectives). Finally, several RTAs include specific provisions to promote the exchange of information and cooperation in the design and implementation of voluntary requirements such as environmental labelling schemes. Table 4 provides an illustrative list of existing provisions in RTAs for all of these different categories of regulatory cooperation and good regulatory practices. These provisions could inspire the design of possible multilateral disciplines on regulatory cooperation and good regulatory practices in EGS.

40. See for example USMCA and CETA and the EU-Japan and EU-UK agreements.

41. See for example chapter 7 on non-tariff barriers to trade and investment in renewable energy generation under the EU-Vietnam free trade agreement, CPTPP Annex 8-G on organic products, or USMCA Annex 12 D on Energy Performance Standards.

**Table 4. Examples of RTA Provisions on Regulatory Cooperation and Good Regulatory Practices in EGS**

<b>Horizontal commitment to apply good regulatory principles to the design of standards and regulations relating to environmental goods and services</b>
<p><i>ANZTEC, Chapter 17, Article 3.2</i></p> <p>Accordingly, the Parties shall: [...] (d) encourage the application of good regulatory principles to the design of any future standards and regulations relating to environmental goods and services, including transparency, proportionality, a preference for least trade-distorting measures, and the use of internationally agreed standards.</p>
<b>Harmonization of specific standards or test procedures</b>
<p><i>USMCA Article 12.D.4: Enhancing Regulatory Compatibility</i></p> <ol style="list-style-type: none"> <li>The Parties shall cooperate on energy performance standards and related test procedures in order to facilitate trade among the Parties and advance energy efficiency, including through the use of fora in existence.</li> <li>With respect to products for which each Party applies energy performance standards or test procedures on the date of entry into force of this Agreement, the Parties shall endeavour to harmonize:* <ol style="list-style-type: none"> <li>test procedures for those products no later than eight years after the date of entry into force of this Agreement. and;</li> <li>energy performance standards for those products no later than nine years after the date of entry into force of this Agreement.</li> </ol> </li> </ol> <p>* The Parties recognize that successful efforts at harmonization should not diminish consumer welfare, consumer protection, or energy efficiency objectives. To that end, the Parties shall take into account, as appropriate, various factors including those relating to climate, geography, household purchasing power, and electricity infrastructure.</p>
<b>Recognition or equivalence of technical regulations, standards, or or conformity assessment procedures</b>
<p><i>CPTPP, Annex 8-G: Organic Products</i></p> <p>4. A Party is encouraged to consider, as expeditiously as possible, a request from another Party for recognition or equivalence of a technical regulations, standards or conformity assessment procedures that relates to the production, processing, or labelling of products of another Party as organic. Each Party is encouraged to accept as equivalent or recognize the technical regulations, standards or conformity assessment procedures that relate to the production, processing or labelling of products of that other Party as organic, if the Party is satisfied that the technical regulations, standards or conformity assessment procedures of that other Party adequately fulfils the objectives of the Party's technical regulations, standards or conformity assessment procedures. If a Party does not accept as equivalent or recognize the technical regulations, standards or conformity assessment procedures that relate to the production, processing, or labelling of products of that other Party as organic, it shall, on request of that other Party, explain its reasons.</p>
<b>Mutual acceptance of conformity assessment procedures</b>
<p><i>EU-Singapore Free Trade Agreement, Article 7.5 Standards, Technical Regulations and Conformity Assessment</i></p> <p>With respect to products listed in Chapter 84 of the Harmonized System (except 8401) as well as in HS 850231 and 854140:</p> <ol style="list-style-type: none"> <li>the Union will accept declarations of conformity from Singapore suppliers under the same terms as from Union suppliers for the purpose of placing such products on the market, without any further requirements; and</li> <li>Singapore will accept EU declarations of conformity or test reports, for the purpose of placing such products on the market without any further requirements [...]</li> </ol>
<b>Using international standards as a basis for domestic standards</b>
<p><i>EU-Singapore Free Trade Agreement, Article 7.5 Standards, Technical Regulations and Conformity Assessment</i></p> <p>Where international or regional standards exist with respect to products for the generation of energy from renewable and sustainable non-fossil sources, the Parties shall use these standards, or their relevant parts, as a basis for their technical regulations except when such international standards or relevant parts would be an ineffective or inappropriate means for the fulfilment of the legitimate objectives pursued. For the purposes of applying this paragraph, the International Organization for Standardization (hereinafter referred to as "ISO") and the International Electrotechnical Commission (hereinafter referred to as "IEC") shall in particular be considered relevant international standard-setting bodies.</p>
<b>Promote information exchange and cooperation on voluntary labelling schemes</b>
<p><i>USMCA, Article 12.D.5: Voluntary Approaches to Promote Energy Efficiency</i></p> <p>With respect to products listed in Chapter 84 of the Harmonized System (except 8401) as well as in HS 850231 and 854140:</p> <ol style="list-style-type: none"> <li>The Parties also recognize that voluntary programs and voluntary mechanisms should be open, transparent, and designed in a manner that maximizes benefits to consumers and environmental benefits, and avoids the creation of unnecessary barriers to trade.</li> <li>The Parties shall encourage the use of voluntary programs and voluntary mechanisms and cooperate, as appropriate, to facilitate greater transparency and compatibility among these voluntary programs and voluntary mechanisms.</li> </ol>
<p><i>CPTPP, Annex 8-G: Organic Products</i></p> <ol style="list-style-type: none"> <li>Each Party is encouraged to take steps to: <ol style="list-style-type: none"> <li>exchange information on matters that relate to organic production, certification of organic products, and related control systems; and</li> <li>cooperate with other Parties to develop, improve and strengthen international guidelines, standards and recommendations that relate to trade in organic products.</li> </ol> </li> </ol>

## 4.4 Subsidies and Local Content Requirements

Depending on their design, subsidies can affect trade in EGS either directly or indirectly. Subsidies provided by a country directly to domestic EGS firms can stimulate domestic production but they can also hinder trade opportunities for foreign producers of similar goods and services in their own market, in the subsidizing country's market, or in third markets. Such subsidies are normally disciplined under WTO rules through relevant provisions of the Agreement on Subsidies and Countervailing Measures (SCM Agreement) and automatically apply to any party to an RTA who is a WTO member.

Subsidies that both encourage or constrain the uptake of clean energy sources can also indirectly encourage or constrain trade in goods and services associated with the delivery of such energy sources.

For example, subsidies that are provided for fossil fuel generation can artificially lower the price of fossil fuel generated electricity and tilt the playing field against renewables. On the other hand, incentives such as feed-in tariffs and tax breaks to renewable energy producers can provide incentives for the generation of renewable energy, particularly when they cannot compete with fossil fuel energy sources otherwise. In many instances, countries may also provide consumer-related energy subsidies to help socio-economically disadvantaged groups.

As governments try to foster domestic productive capacities in EGS, they sometimes condition support to the sector on the use of locally manufactured equipment in power projects (i.e. local content requirements) or mandate the use of locally hired labour. In addition, countries may sometimes offer other incentives that favour locally established manufacturers or services providers (e.g. access to free or subsidized land) that might help the domestic growth of these industries but discriminate against providers of these goods and services based abroad that might not benefit from such subsidies.

Alongside WTO rules under the Agreement on Trade-Related Investment Measures that prohibit the use of performance

requirements (with exceptions granted to developing countries under certain circumstances), Article 3.1(b) of the SCM Agreement prohibits subsidies that are contingent on the use of domestic over imported goods. The General Agreement on Trade in Services (GATS) however offers greater flexibility. While Article II of the GATS provides an obligation for members not to discriminate between trading partners who are WTO members (i.e. MFN obligation), the non-discrimination requirement between its own service suppliers and those of its WTO trading partners (i.e. national treatment) only applies to specific sectors that WTO members reflect in their schedule of commitments and where the member has not included exceptions (e.g. performance requirements or other conditionalities like joint-venture requirements, employment of domestic nationals, or restrictions on the number of foreign nationals that can be appointed or employed). In addition, while Article XV of the GATS provides for negotiations on services with a view to developing multilateral disciplines on subsidies, there is currently no set of WTO rules disciplining services subsidies as there is for goods (WTO, 1995).

Although many RTAs reaffirm existing WTO disciplines on these matters, others contain disciplines that go beyond WTO rules in terms of scope and coverage (Yamaguchi, 2020a). Many bilateral investment treaties also contain provisions that limit the scope and use of local content policies. Investment chapters in RTAs also sometimes contain provisions on local content policies that go beyond WTO rules and which apply to services. While their scope and coverage vary widely, many RTAs negotiated by the EU and US contain investment chapters that include more stringent disciplines to curtail the use of local content policies.

The CPTPP contains an extensive list of prohibited performance requirements such as local content or technology localization requirements. Interestingly, these restrictions apply to all investors and are not limited to nationals of the treaty parties. This implies that parties to the CPTPP have agreed to eliminate certain forms of local content policies on a multilateral basis (Ramdoo, 2016).

The EU-Singapore FTA is another example of an agreement that contains specific disciplines on subsidies and local content

measures. Article 7.4 of the EU-Singapore FTA obliges each party to “refrain from adopting measures providing for local content requirements or any other offset affecting the other party’s products, service suppliers, entrepreneurs or establishments” related to energy generation from renewable and sustainable non-fossil sources.

The EU-Singapore FTA also contains provisions on energy subsidies that could indirectly impact EGS sectors. For example, Article 12.11.3 contains language stating that the parties recognize the need to reduce greenhouse gas emissions and the need to limit distortions of trade as much as possible when developing public support systems for fossil fuels. It also recognizes the need for parties to share the goal of progressively reducing fossil fuel subsidies. It adds that such reductions “may be accompanied by measures to alleviate the social consequences associated with the transition to low carbon fuel” (European Commission, n.d.-b).

Parties can also agree to prevent remedial action such as countervailing measures against a set of well-defined and clearly circumscribed non-actionable subsidies that benefit the environment. Mirroring language of the now lapsed Article 8 of the SCM Agreement, Article 111(1) of the Caribbean Community and Common Market, for instance, exempts a number of environmentally beneficial subsidies from remedial action. Such subsidies also include those available to all firms to adopt new equipment and production processes in response to new environmental requirements imposed by law and/or regulations which result in greater constraints and financial burden on enterprises. However, these subsidies must also meet a number of conditions in order to be permissible, such as being a one-time, non-recurring measure and limited to 20% of the cost of adaptation (SICE, n.d.-d).

Finally, Article 22.8 of the New Zealand-UK FTA has far-reaching provisions on fossil fuel subsidy reform and a clean energy transition. It obliges each party to take steps to eliminate harmful fossil fuel subsidies where they exist, with limited exceptions in support of legitimate public policy objectives. It also obliges parties to end new direct financial support, such as officially supported export credits, for fossil fuel energy in non-parties, except in limited circumstances

where such support: (i) meets a legitimate policy goal, such as improved safety or environmental standards; or (ii) supports a clean energy transition aligned with the goals of the Paris Agreement (UK Government, 2022c).

While some of these provisions on fossil fuel subsidies as well as provisions on “non-actionable subsidies” may not directly affect trade in EGS, they could indirectly do so in the long term by creating a “demand-pull” effect for cleaner energy sources and by implication EGS associated with their delivery. Thus, in a certain sense, they could be seen as removing a significant non-tariff barrier that could impede greater flows of EGS.

## 4.5 Government Procurement

According to the WTO (n.d.-g), government procurement accounts for 10–15% of the gross domestic product of an economy on average. It has been estimated that procurement of services by governments could represent as much as 30% of overall services trade (Hoekman & Primo Braga 1997; Anderson & Müller, 2008; Anderson et al., 2015). In view of such significant outlays and trade flow impacts, green procurement practices can be a powerful lever to influence market demand, promote the uptake of EGS, set minimum environmental standards, and encourage the development of local EGS industries.

For example, the European Commission’s strategy for plastics in a circular economy adopted in 2018 identifies green public procurement as a tool for reducing plastic waste and highlights the role that green public procurement criteria can play in improving the recyclability of plastics. The strategy specifically recommends that national, regional, and local authorities should make greater use of public procurement to support plastic waste prevention and recycling of plastics. As part of its green public procurement initiative, the Catalan government mandates the use of post-consumer recycled plastic in at least 80% of all the plastic used in garbage bags (Deere Birkbeck & Sugathan, 2022).

However, procurement measures can also discriminate against foreign suppliers. For this reason, the WTO’s Government Procurement Agreement (GPA) lays down disciplines to ensure that signatories provide non-

discriminatory trade opportunities to domestic and foreign goods and services providers for covered goods, services, and construction. It also provides for exceptions for the protection of human, animal or plant life, or health under Article III:2(b), similar to Article XX(b) of the GATT. In addition, procuring entities have flexibility to set environmental considerations and requirements as part of their procurement criteria.<sup>42</sup> The GPA however is a plurilateral agreement, which only applies to the 48 countries that are parties to the agreement and therefore does not extend to the entire WTO membership. Further, only those procurement activities that are carried out by covered entities purchasing listed goods, services, or construction services of a value exceeding specified threshold values are covered by the agreement (WTO, n.d.-e).

The majority of RTAs that have been notified to the WTO in recent years contain provisions on government procurement, whether of a detailed or a limited nature. By 2015, more than 75 WTO members had undertaken, on at least one occasion, trade liberalization in the area of government procurement, either via the GPA or an RTA. Most RTAs with government procurement provisions have at least one member that is party to the GPA (Anderson et al., 2015).

The flexibility to set environment-related procurement criteria is also present in many RTAs. It is reflected, for example, in Article 12.8(6) of the Korea-Australia FTA, Article 10.9(11) of the EU-Singapore FTA, and Articles 19.9(6) and 19.9(9) of CETA. In each case, these agreements simply state the right of parties to draft technical specifications (and in the case of CETA also the award criteria) based on environmental requirements. In this regard, they do not significantly go further than GPA provisions. Even in terms of entities and sectors most RTAs do not move beyond the coverage provided under GPA, particularly if the RTA involves a non-GPA party.

For example, US coverage of federal, sub-federal, and other entities is greater in the revised GPA as compared to its coverage under FTAs with Chile, Colombia, Panama, and Peru and with the Dominican Republic under the Central American FTA (CAFTA-DR) (Pelletier, 2018). This could serve to make further accession to the GPA attractive to those members that wish to benefit from expanded market access under the GPA. At the same time, the government procurement chapter in many RTAs (including those involving non-GPA members) is modelled substantially or entirely on the text of the WTO GPA. This implies that that a significant number of countries, including, for example, major Latin American developing countries that are currently non-GPA members, have, in fact, committed to implement GPA-style disciplines via RTAs. This could also eventually facilitate the accession of such countries to the GPA (Anderson et al., 2015).

Provisions related to environmental requirements for government procurement may or may not have a specific impact on trade flows in EGS. However, they may act as a trigger for boosting EGS-related procurement, for example in environmentally preferable products. Similarly, while procurement-related market access and non-discrimination provisions in the GPA and in RTAs could apply to all covered goods and services procured by listed federal, sub-federal, or other entities, in some cases parties can take a negative list approach and explicitly specify exclusions of certain goods and services (as has been done by Australia for services under the GPA and the CPTPP as well as Peru for certain goods under the CPTPP). They can also adopt a positive list approach and list, for example, the specific sectors covered—an approach that is followed by the EU for service sectors under the GPA and by Malaysia under the CPTPP (Australian Government, n.d.; WTO, n.d.-b). As long as EGS is not specifically excluded for procurement purposes, procurement-related provisions in existing and future RTAs could be assumed to increase the market access opportunities for EGS.

42. Article X(6) of the revised GPA affirms that: "A Party, including its procuring entities, may – for greater certainty – in accordance with this Article, prepare, adopt or apply technical specifications to promote the conservation of natural resources or protect the environment." Further, Article X(9) of the GPA states that "the evaluation criteria set out in the notice of intended procurement or tender documentation may include, among others, price and other cost factors, quality, technical merit, environmental characteristics and terms of delivery" (WTO, n.d.-b).



## 4.6 Support Measures: Technical Assistance, Finance, and Capacity Building

Beyond market access and rules-related provisions, several RTAs involving parties from developing countries also incorporate clauses covering different forms of support measures. Such measures respond to the need to support a just transition to a greener economy in developing countries and overcome shortfalls in technological and institutional capacities. In practice, these measures mostly take the form of efforts at promoting access, diffusion, or transfer of environmental technologies as well as support through technical assistance, finance, and capacity building.

### 4.6.1 Transfer of Technology

Provisions related to the transfer of technology are usually best endeavour provisions. For example, the Nicaragua-Taiwan FTA in Annex 19.08 (Environmental Cooperation) provides for cooperation to facilitate technology development and transfer as well as training related to clean production technologies, water protection, conservation and preservation, hazardous and non-hazardous waste management, and the monitoring and management of biodiversity and endangered species (SICE, n.d.-c). Similarly, the China-Switzerland FTA in Article 12.5 (Bilateral Cooperation) stipulates that environmental cooperation between the parties “should also address the issue of

technology cooperation and transfer, especially regarding environmentally friendly technologies” (APEC, 2017). The Canada-Peru Side Agreement on the Environment identifies in Article 7 and Annex 1 the development of clean technologies as a priority area of cooperation. (Gehring et al., 2013; Government of Canada, n.d.). Similarly, Article 50 of the EU-Central America Association Agreement provides for cooperation on measures such as “transfer and use of sustainable technology and know-how, including creation of incentives and mechanisms for innovation and environmental protection” (EUR-Lex, 2012).

### 4.6.2 Technical Assistance, Financial Cooperation, and Capacity Building

Technical assistance, financial support, and capacity building are an important part of realizing environmental cooperation and commitments in FTAs concluded between developed and developing parties. These often include capacity building activities aimed at institutional strengthening or better environmental management through the development of environmental projects, information sharing and exchange of experts, and financial cooperation. Examples under each of these categories are listed in Table 5. Notably, APEC’s Committee on Trade and Investment has also developed text for model environmental measures based on those found in 15 RTAs/FTAs. They include model measures on cooperation and capacity building.<sup>43</sup>

43. For example: joint programmes and environmental technology demonstrations; research studies and reports; exchange of professionals, technicians, and specialists; exchange of technical information, publications, and regulations; organization of joint conferences, seminars, workshops, and training sessions; and outreach and educational programmes (APEC, 2017).

**Table 5. Examples of Technical Assistance, Capacity Building, and Financial Cooperation relevant to EGS**

<b>Capacity and institution building</b>
<p><i>Japan-Mexico FTA, Article 147</i></p> <p>The Parties, recognizing the need for environmental preservation and improvement to promote sound and sustainable development, shall cooperate in the field of environment. Cooperative activities under this Article may include: (b) promotion of capacity and institutional building to foster activities related with the Clean Development Mechanism under the Kyoto Protocol to the United Nations Framework Convention on Climate Change, as may be amended, by means of workshops and dispatch of experts, and exploration of appropriate ways to encourage the implementation of the Clean Development Mechanism projects.</p> <p><i>EU-ACP (African, Caribbean, and Pacific) Cotonou Agreement, Article 32</i></p> <ol style="list-style-type: none"> <li>Co-operation on environmental protection and sustainable utilization and management of natural resources shall aim at: <ol style="list-style-type: none"> <li>building and/or strengthening the scientific and technical human and institutional capacity for environmental management for all environmental stakeholders.</li> </ol> </li> </ol>
<b>Environmental projects</b>
<p><i>EU-Cariforum (Caribbean Forum) Economic Partnership Agreement (EPA) Article 138</i></p> <ol style="list-style-type: none"> <li>Subject to the provisions of Article 7 and 134, the Parties agree to cooperate, including by facilitating support, in the following areas: <ol style="list-style-type: none"> <li>projects related to environmentally-friendly products, technologies, production processes, services, management and business methods, including those related to appropriate water-saving and Clean Development Mechanism applications;</li> <li>projects related to energy efficiency and renewable energy.</li> </ol> </li> </ol>
<b>Information sharing and exchange of experts</b>
<p><i>EU-SADC (Southern African Development Community) EPA, Article 11</i></p> <ol style="list-style-type: none"> <li>The Parties recognize the importance of working together on trade related aspects of environmental and labour policies in order to achieve the objectives of this Agreement.</li> <li>The Parties may exchange information and share experience on their actions to promote coherence and mutual supportiveness between trade, social and environmental objectives, and shall strengthen dialogue and cooperation on sustainable development issues that may arise in the context of trade relations.</li> <li>In respect of paragraphs 1 and 2, the Parties may cooperate, inter alia, in the following areas: <ol style="list-style-type: none"> <li>the trade aspects of labour or environmental policies in international fora, such as the ILO Decent Work Agenda and MEAs [multilateral environmental agreements];</li> <li>the impact of this Agreement on sustainable development;</li> <li>corporate social responsibility and accountability;</li> <li>trade aspects of mutual interest to promote the conservation and sustainable use of biological diversity;</li> <li>trade aspects of sustainable forest management; and</li> <li>trade aspects of sustainable fishing practices.</li> </ol> </li> </ol> <p><i>Canada-Peru Environment Agreement (Side agreement to Canada-Peru FTA), Article 5</i></p> <ol style="list-style-type: none"> <li>The Parties agree to make best efforts to find appropriate resources to effectively implement a Work Program. The Work Program could be implemented: <ol style="list-style-type: none"> <li>through financial cooperation for priority projects presented by the Parties. The resources could come from, inter alia, public entities or agencies from the Parties, or when appropriate, from private institutions, foundations or international public organizations.</li> </ol> </li> </ol> <p><i>EFTA-Indonesia CEPA, Article 9.3 (3)</i></p> <ol style="list-style-type: none"> <li>Means of cooperation and capacity building may include: (a) exchange of information, transfer and exchange of expertise and training, including through facilitating exchange visits of researchers, experts, specialists and private sector representatives.</li> </ol>
<b>Financial cooperation</b>
<p><i>Canada-Peru Environment Agreement (Side agreement to Canada-Peru FTA, Article 7)</i></p> <ol style="list-style-type: none"> <li>The Parties agree to make best efforts to find appropriate resources to effectively implement a Work Program. The Work Program could be implemented: <ol style="list-style-type: none"> <li>through financial cooperation for priority projects presented by the Parties. The resources could come from, inter alia, public entities or agencies from the Parties, or when appropriate, from private institutions, foundations or international public organizations.</li> </ol> </li> </ol> <p><i>EFTA-Indonesia CEPA, Article 9.3</i></p> <ol style="list-style-type: none"> <li>Means of cooperation and capacity building may include: <ol style="list-style-type: none"> <li>grants, development funds or other financial means.</li> </ol> </li> </ol>

Source: Government of Canada, n.d.; SICE, n.d.-a; SICE, n.d.-b; European Commission, 2016; EFTA n.d.

## 5. Conclusion

In the absence of significant action on facilitating and promoting trade and investment in EGS at the multilateral level, RTAs have become the de facto locus for cooperation in this area. While the provisions contained in these agreements vary widely according to the priorities and level of ambition of the parties involved, overall, RTAs have been the preferred avenue to undertake new commitments on EGS. They also serve as laboratories for innovation, incubation, and testing of new ideas and approaches. Consequently, they provide useful examples of the type of cooperation that could be considered at the multilateral level.

Lessons from those experiences are particularly relevant in four main areas. First, RTAs have been at the forefront of determining what constitutes EGS—an issue that has been subject to considerable debate at the multilateral level. The lists of goods and services identified in RTAs such as ANZTEC and the New Zealand-UK FTA, or the different approaches envisaged to deal with concerns of dual use in the Reference List of Environmental and Environmentally Related Services endorsed by APEC ministers, provide useful reference points for discussion in the WTO.

Second, contrary to the relatively narrow focus of EGS talks in the WTO, many RTAs have gone beyond a pure market access agenda to incorporate a variety of approaches and provisions related to regulatory cooperation, good regulatory practices, government procurement, investment, transfer of technology, finance, and capacity building among others. As WTO members advance work through the TESSD and IDP initiatives to explore possible options to promote EGS through a broad and inclusive approach, these precedents

can serve as inspiration for cooperation and provide ideas to avoid a repetition of past mistakes. A broadened agenda may also help ensure a wider participation, particularly from developing countries.

Third, RTAs have spearheaded the design of sectoral approaches to deal with non-tariff barriers, including regulations, standards and conformity assessments, through efforts at promoting harmonization, mutual recognition, equivalences, the use of international standards, or simply the exchange of information. These approaches have focused on particular environmental concerns like renewable energy, energy efficiency, or organic agriculture as a starting point and have crafted dedicated provisions to address the specific non-tariff measures affecting trade in those areas. Such pragmatic efforts could serve as a model to advance discussions in the WTO that are clearly oriented towards delivering effective environmental benefits through trade. They may also be an effective way to address non-tariff barriers, which tend to be sector or issue specific.

Finally, RTAs have explored a wide range of collaborative efforts that go beyond traditional WTO negotiated outcomes. These efforts have taken the form of binding agreements that range from voluntary commitments and pledges to best endeavour clauses in different areas. Here again, these experiences could inspire WTO members to broaden the array of possible outcomes that could be envisaged in ongoing and future deliberations, which in turn could help attract a greater number and diversity of members.

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## ANNEX. Illustrative Sample of EGS-Related Provisions in RTAs

TYPES OF PROVISIONS		POSSIBLE OPTIONS TO FACILITATE TRADE IN EGS	PRECEDENTS IN EXISTING RTAs
<b>INCORPORATION OF EGS PROVISIONS</b>		In horizontal chapters (e.g., trade and environment or trade and sustainable development chapters)	Art. 24.9 CETA; Art. 20.18 CPTPP; Art 24.24 USMCA
		In individual schedules of commitments for goods and / or services	Vast majority of RTAs
		In sectoral chapters	Chapter 7 of EU-Singapore FTA and EU-Vietnam FTA on non-tariff barriers to trade and investment in renewable energy generation
		In sectoral annexes	USMCA Annex 12 D on Energy Performance Standards
<b>SCOPE AND COVERAGE</b>	Goods	Sub-categories of goods relevant to the environment defined at the 8-, 10- or 12-digit level through the use of ex outs where liberalization is voluntary and limited to either selected ex-outs or cover all of the HS 6-digit based on individual economy's decision.	2012 APEC Leaders' Declaration-Annex C: APEC list of 54 environmental goods
		Sub-categories of goods relevant to the environment defined at the 8-, 10- or 12-digit level through the use of ex outs included in a separate column for illustrative purposes (with tariff cuts applying to the entire HS 6-digit subheading).	FTAs with separate environmental goods Annexes. E.g., Annex 7 of ANZTEC and Annex 22-A of the New Zealand-UK FTA
	Services	Environmental services under CPC Division 94 and services with predominantly or exclusive environmental use	APEC Reference List of Environmental and Environmentally Related Services
		Services related to the investment, sale, delivery or installation of predefined environmental goods or technologies	Chapter 17, Article 3 of ANZTEC
		Sub-categories of services relevant to the environment within subclasses of the CPC 2.1 classification at the 5-digit level through the use of ex-outs	APEC Reference List of Environmental and Environmentally Related Services
	<b>MARKET ACCESS COMMITMENTS</b>	Goods	Liberalization of all goods across the board with limited set of exclusions or longer transition periods
Liberalization of goods across the board with a separate reference or annex schedule mentioning environmental goods			Chapter 17, article 3 and Annex 7 of ANZTEC Article 22.7 and Annex 22A of the New Zealand-UK FTA
Conditioning market access concessions in the form of tariff rate quotas or reduced tariffs to the fulfilment of sustainability requirements			Annex V, Comprehensive Economic Partnership Agreement between EFTA States and Indonesia
Voluntary tariff reduction			2012 decision APEC economies to cut MFN tariffs voluntarily to 5% or less on 54 environmental goods
Services		Liberalization of all services across the board with limited set of exclusions through a "negative list approach"	RTAs adopting a "negative list approach"
		Market access and national treatment commitments in individual schedules of commitments in environmental services including beyond CPC Division 94	Commitments undertaken by the EU under the EU-Singapore (Appendix 8-A), EU-Korea (Annex 7-A) or EU Viet Nam (Appendix 8-A and B) on recycling services.



TYPES OF PREVISIONS	POSSIBLE OPTIONS TO FACILITATE TRADE IN EGS	PRECEDENTS IN EXISTING RTAs
<b>COOPERATION ON EGS</b>	General commitment to facilitate and promote trade in environmental goods and services	Article 16.12(c) EU-Japan FTA; Art. 275.5(a). of the EU, Colombia and Peru FTA; Art. 405 of the EU-UK FTA; Article 22.6 and Article 22.7.3 of the New Zealand-UK FTA. Article 12.11.2 of the EU-Singapore FTA.
	Promote and facilitate investment in environmental goods and services	Article 6(b), Sub-Section 2 on Investment and Environment of the EU-China Comprehensive Agreement on Investment.
	Developing cooperative projects on environmental goods and services	Article 24.24.4 of USMCA; Article 4.3 of ANZTEC
	Commitment to identify a list of environmental goods and services of mutual interest	Article 19.4 of the Korea-Peru FTA
<b>REGULATORY COOPERATION AND GOOD REGULATORY PRACTICES</b>	Horizontal commitment to apply good regulatory principles to the design of standards and regulations relating to environmental goods and services	Chapter 17, Article 3 of ANZTEC
	Promoting harmonization or equivalence of specific standards or regulations	USMCA Annex 12 D on Energy Performance Standards
	Using international standards as a basis for domestic standards	Chapter 7 of EU-Singapore FTA
	Recognition or equivalence of a technical regulations, standards or conformity assessment procedures	CPTPP Annex 8-G on organic products;
	Establishing a mutual acceptance of conformity assessment procedures	Chapter 7 of EU-Singapore FTA
	Promoting information exchange and cooperation on voluntary labelling schemes	CPTPP Annex 8-G on organic products; USMCA Annex 12D on Energy Performance Standards
<b>SUBSIDIES AND COUNTERVAILING DUTIES</b>	Disciplines on local content requirements	Article 7.4 of EU-Singapore FTA Article 9.10 of the CPTPP
	Exclude remedial action against beneficial subsidies	Article 111(1) of the Caribbean Community and Common Market
	Limit distortions of trade as much as possible when developing public support systems for fossil-fuels	Article 12.11.3 of the EU-Singapore FTA.
	Exemption on obligation to eliminate fossil-fuel subsidies in cases where it supports a clean energy transition aligned with the goals of the Paris Agreement.	Article 22.8 of the New Zealand-UK FTA
<b>GOVERNMENT PROCUREMENT</b>	Flexibility to set environmental considerations and requirements as part of the procurement criteria	Article 12.8(6) of the Korea-Australia FTA, Article 10.9(11) of the EU-Singapore FTA, Articles 19.9(6) and 19.9(9) of CETA.

TYPES OF PROVISIONS		POSSIBLE OPTIONS TO FACILITATE TRADE IN EGS	PRECEDENTS IN EXISTING RTAs
SUPPORT MEASURES	Transfer of technology	Co-operation to facilitate technology development and transfer and training	Annex 19.08 (Environmental Cooperation Mechanism) of Nicaragua-Taiwan FTA
		Environmental co-operation to address the issue of technology cooperation and transfer, especially regarding environmentally friendly technologies.	Article 12.5 (Bilateral Cooperation) of China-Switzerland FTA
		Development of clean technologies as a priority area of co-operation	Article 7 and Annex 1 of Agreement on the Environment between Canada and the Republic of Peru
		Co-operation on transfer and use of sustainable technology and know-how, including creation of incentives and mechanisms for innovation and environmental protection	Article 50 of EU-Central America Association Agreement
	Technical assistance and capacity building	Capacity and institution building	Article 147 of the Mexico-Japan FTA Article 32 of EU-ACP Cotonou Agreement
		Support to environmental projects	Article 138 of the EU-CARIFORUM RTA
		Information-sharing and Exchange of Experts	Article 11(2) of EU-SADC EPA Article 9.3(3) (a) of EFTA-Indonesia CEPA Article 7.5(a) of Canada-Peru Environment Agreement (Side agreement to Canada-Peru FTA)
		Financial Co-operation	Article 9.3(3)(b) of EFTA-Indonesia CEPA Article 7(5)(b) of Canada-Peru Environment Agreement (Side agreement to Canada-Peru FTA)



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