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Trade and Climate Change

Promoting climate goals with a WTO agreement

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Foreword

The WTO's twelfth Ministerial Conference is finally around the corner after having been postponed due to the COVID-19 pandemic. Beginning with the Doha Round, WTO members have negotiated on several initiatives relevant to environmental goods and services but have thus far not successfully concluded negotiations. With the advent of the Paris Agreement, the changing climate, and the urgency to act, it has become increasingly important for the WTO to act to help address the major global challenge the world is facing — climate change.

In this study, we analyse possibilities for the WTO and its members to promote climate goals through a plurilateral trade agreement, examining issues specific to liberalising trade in climate-friendly goods and services, and reforming fossil fuel subsidies. As the participation of developing countries is highly desirable from climate and development perspectives, we also consider how an agreement could be designed from a development perspective. A WTO climate agreement of the kind proposed would show that trade policy can be mobilised for climate action and constitute an important contribution to the attainment of the objectives of the Paris Agreement.

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Anders Ahnlid
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Content

Abbreviations

ACCTS	Agreement on Climate Change, Trade and Sustainability
Agenda 2030	The United Nations 2030 Agenda for Sustainable Development
AoA	Agreement on Agriculture
APEC	Asia-Pacific Economic Cooperation
CPC	United Nations Central Product Classification
DSU	Dispute Settlement Understanding
EPP	environmentally preferably products
GATS	General Agreement on Trade in Services
GATT 1994	General Agreement on Tariffs and Trade 1994
GPA	Agreement on Government Procurement
G20	Group of Twenty
HS	Harmonized System
ICTSD	International Centre for Trade and Sustainable Development
IEA	International Energy Agency
IISD	International Institute for Sustainable Development
IPCC	Intergovernmental Panel on Climate Change
ITA	Information Technology Agreement
JSI	Joint Statement Initiative
LDC	Least-developed country
MC12	Twelfth Ministerial Conference of the World Trade Organization
MFN	most-favoured nation
MRA	Mutual Recognition Agreement
NTB	Non-Tariff measures
NTM	Non-Tariff Measures
OECD	Organization for Economic Co-operation and Development
SCM Agreement	Agreement on Subsidies and Countervailing Measures
SDG	Sustainable Development Goals
SDT	Special and differential treatment
SMEs	small and medium sized enterprises
SPS	sanitary and phytosanitary
STRI	Services Trade Restriction Index
TBT	technical barriers to trade
TBT Agreement	Agreement on Technical Barriers to Trade
TESSD	Trade and Environmental Sustainability Structured Discussions
TFA	Agreement on Trade Facilitation
TiSA	Trade in Services Agreement
UN	United Nations
UNEP	The United Nations Environment Programme
UNESCAP	The United Nations Economic and Social Commission for Asia and the Pacific
UNCTAD	United Nations Conference on Trade and Development
WCO	World Customs Organization
W/120 list	World Trade Organization's Services Sectoral Classification List
WTO	World Trade Organization
WTO Agreement	Marrakesh Agreement Establishing the World Trade Organization

Executive summary

This report analyses the possibilities for the WTO and its members to promote climate goals within a plurilateral trade agreement by examining issues specific to liberalising trade in climate-friendly goods and services and reforming fossil fuel subsidies. The report combines economic and legal analyses and provides policy recommendations on ways to move forward. We first look at what could and should be negotiated; then we look at how negotiated outcomes could be implemented in an agreement.

We recommend that negotiators aim for zero tariffs for as many climate-friendly goods, hereafter climate goods, and their production inputs as possible because tariff elimination reduces the cost of mitigation actions and promotes the spread of climate-friendly technology across borders. Our analysis reveals a wide range of climate goods and inputs which have the potential for liberalisation. Furthermore, our review of mitigation options identifies areas that have the potential to supplement categories used in previous negotiations. We, therefore, suggest the inclusion of four new categories: climate infrastructure; technologies to support behavioural change; circular economy; and agriculture, land and forest management.

Additional categories suggested for a WTO climate negotiation:

Non-tariff barriers on goods should also be included in the negotiations to increase the economic and mitigation impacts of an agreement. Furthermore, we see actions to address these barriers as key to negotiations since non-tariff barriers affect trade prospects. Our analysis highlights the potential to address technical barriers to trade with respect to climate goods. This could be done through a number of mechanisms. Some of the available regulatory tools, particularly an agreement on mutual recognition of results (MRA), require a high level of trust between parties as well as an in-depth understanding of the respective regulatory systems, and this can bring challenges in a context in which many different countries are involved. A particular challenge would be the lack of national quality infrastructures in certain countries and the connected need for capacity building for such countries to be able to benefit from an MRA. Therefore, other approaches, for example provisions on information exchange, could be used as a first step to build trust in each other's regulatory systems. It is also important to consider harmonisation of international standards for climate goods.

Services are critical to promoting the dissemination of technologies and knowledge needed for the climate transition both in their own right and as complements to climate goods. Therefore, negotiations on further market access openings for services relevant to greenhouse gas mitigation are vitally important. Key climate services, such as engineering or architecture, should be liberalised via a climate cluster approach by specifying these services on the basis of their contribution to a mitigation project or end use. The same categories used in previous negotiations for

goods and the four new suggested categories should also be used to identify climate-relevant services.

All inefficient fossil fuel subsidies have detrimental climate effects and distort trade, and the phase out of such subsidies is almost certainly necessary to reach the Paris targets. Based on the approaches adopted in existing agreements, we conclude that there are many promising options for the creation of binding and enforceable disciplines for fossil fuel subsidies. We also conclude that disciplines which prohibit all or as many inefficient fossil fuel subsidies as possible offer the greatest benefit in terms of emission reductions and the minimisation of trade distortion. Certain fossil fuel subsidies that are arguably less inefficient, that is, tax breaks related to carbon pricing, could be made actionable, non-actionable or subject to reduction commitments depending on political ambitions.

As the participation of developing countries is highly desirable from climate and development perspectives, negotiators should consider capacity building, funding for technology transfer and support for developing countries to identify climate goods and services relevant to their interests. It is also important to include developing countries in the negotiation of disciplines for fossil fuel subsidies as well as TBT issues. We find the TFA approach whereby some commitments would have longer implementation periods and others would depend on technical assistance for developing countries highly relevant for all the issues covered by an agreement. Moreover, this could increase low-income members' willingness to join and accept an agreement.

From a legal perspective, an agreement covering all the areas should ideally be designed as an Annex 4 Agreement. An Annex 4 Agreement would be a legally clear option to implement an ambitious plurilateral outcome within the WTO. This alternative would have the highest potential to contribute to global climate action since it could include comprehensive commitments and provisions on all the areas covered in this study, something that is urgently needed. However, considering the consensus requirement for an Annex 4 Agreement, this is currently not a realistic alternative from a trade policy perspective. A more realistic option would be a Reference Paper type agreement. Such an agreement could cover tariff reductions and sectoral service commitments and possibly also disciplines on TBT issues and

fossil fuel subsidies. However, it is unclear whether and to what extent such an agreement could also cover rules on fossil fuel subsidies and further commitments on TBTs for climate goods. Another politically feasible option could be to negotiate in a first phase the tariff reductions and sectoral services commitments in a Reference Paper type agreement. In a second phase, the more ambitious issues could then be negotiated as an Annex 4 Agreement or as amendments or in parallel to a Reference Paper type agreement on tariff reductions and sectoral services commitments. Negotiations on services could also take place within ongoing services negotiations in the Committee on Trade in Services, Special Session. In any case, in light of the urgent climate crisis, we recommend that negotiations start on all issues as soon as possible and that any outcomes be separately implemented as soon as they are concluded.

Freer trade in mitigation technologies and services would have the greatest effect if the largest greenhouse gas emitters and major trading partners for the covered products and services took part in an agreement. A critical mass provision could therefore increase the climate impact of an agreement and reduce the risk of free riding. But even without a critical mass provision, participating WTO members would benefit from lower tariffs on climate goods and liberalised trade in services, thereby lowering the costs of adjustment to a low carbon economy (with positive spill-over effects due to reduced prices via global value chains). Therefore, we consider that WTO members interested in negotiating tariff reductions on climate-relevant goods and services should not be deterred if one or two of the larger players do not participate and that a critical mass provision is not a necessity.

Due to the risks of carbon leakage, free riding has a more pronounced effect on the climate effectiveness of an agreement on fossil fuel subsidies than on an agreement for goods and services liberalisation. To overcome leakage problems, a negotiated agreement would benefit from some form of critical mass provision. Choosing a threshold for critical mass could be informed by an analysis or modelling of the costs and benefits of different participation levels given estimated leakage effects. The climate benefits of an agreement would increase as the participation of major trading nations that heavily subsidise fossil fuels increases. Broad participation would probably also enable the parties to the agreement to achieve more ambitious disciplines, as the risk of leakage and loss of competitiveness would be reduced. Nevertheless, all major trade nations or main providers of fossil fuel subsidies do not necessarily have to take part in an agreement for it to be effective and worthwhile.

We recommend that WTO members launch ambitious and inclusive negotiations on an agreement to liberalise trade in climate goods and services, including technical barriers to trade at the MC12 as well as on fossil fuel subsidy reform, to ensure that trade and trade policy contribute to reaching the temperature goal of the Paris Agreement in line with the commitments in the Agenda 2030 and the WTO Agreement.

1 Introduction

1.1 A new momentum for negotiations

Tackling climate change has become a top priority in global politics and the World Trade Organization (WTO) must contribute to the effort.[1] The Paris Agreement compels all actors to intensify efforts in support of the climate transition. The time has come for the WTO to break down the walls between climate negotiations and trade negotiations and to put the goals of sustainable development and climate transition at the forefront. In this report, we analyse different possibilities to promote climate goals within a plurilateral trade agreement and also provide concrete recommendations for policymakers on how to move forward.

There are three ongoing processes that have been proposed by different WTO members which point in the direction of a new momentum for negotiations. In addition, there are ongoing negotiations taking placed in the WTO on further specific commitments related to environmental services.

In late 2020, a group of 50 members launched Trade and Environmental Sustainability Structured Discussions (TESSD) with the aim of working together on possible actions and deliverables for environmental sustainability in the various areas of the WTO.[2] In parallel, there are plans for a new joint ministerial statement on fossil fuel subsidy reform.[3]

A smaller group of countries launched negotiations for a new agreement, namely the Agreement on Climate Change, Trade and Sustainability (the ACCTS initiative) in 2020.[4]

In addition, the European Commission issued a non-paper on a possible trade and climate initiative in the WTO.[5] The European Commission has announced that it will present a more detailed initiative on trade and climate in the WTO as part of its overarching commitment to implement the Paris Agreement.[6]

The different proposals and initiatives all cover liberalisation of goods, services, non-tariff measures and fossil fuel subsidies.

1 The WTO is identified as one of the implementing agencies for work to be done under the Sustainable Development Goals (SDG) (see, e.g., SDG 17 on strengthening the means of implementation and revitalising the global partnership for sustainable development).

2 Committee on Trade and Environment, *Communication on Trade and Environmental Sustainability*, Communication from Australia; Canada; Chad; Chile; Costa Rica; European Union; the Gambia; Fiji; Iceland; Japan; Korea, Republic of; Liechtenstein; Maldives; Mexico; Moldova, Republic of; Montenegro; New Zealand; North Macedonia; Norway; Senegal; Switzerland; the Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu; and the United Kingdom WT/CTE/W/249, 17 November 2020. The group is also preparing a ministerial declaration for MC12, see WTO | 2021 News items - China, US welcomed as new participants in trade and environmental sustainability talks.

3 WTO | 2021 News items - Members discuss preparations for MC12 regarding trade and environment.

4 The group comprised New Zealand, Costa Rica, Fiji, Iceland and Norway. Since then, Switzerland has also joined the initiative.

5 European Commission (2020), *WTO and Environment — non-paper on possible Trade and Climate initiative in the WTO*, WK 12027/2020 INIT, 30 October 2020.

6 European Commission (2021), *Annex to the communication from the European Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Trade Policy Review - An Open, Sustainable and Assertive Trade Policy*, Brussels, 18.2.2021, COM(2021) 66 final, ANNEX.

1.2 The purpose of the report

The report aims to contribute to the discussion of what the WTO and its members could and should negotiate to ensure that trade and trade policy contribute to reaching the temperature goal of the Paris Agreement. Given the ongoing ambitions to build back better after the pandemic, we give concrete recommendations for negotiations, taking into account the challenges of developing countries.

The purpose of the report is to analyse how trade commitments on goods, non-tariff barriers (in particular TBTs), services and fossil fuel subsidies could and should contribute to reducing greenhouse gas emissions. First we look into what substantive issues could be included in such negotiations and, secondly, how an agreement could be designed from a legal point of view.

1.3 Method and limitations

This desk study combines legal and economic analyses and provides policy recommendations on ways to move forward. We believe it is important to make room for both perspectives at this point in time since this is when several WTO members are discussing how to move forward in the best possible way.

The legal discussion consists of an analysis of the Marrakesh Agreement Establishing the World Trade Organization (the WTO Agreement) along with other relevant legislation in order to give concrete recommendations.

The economic analysis applies theory and reviews literature on environmental goods, services liberalisation and fossil fuel subsidies. Goods and services that have been proposed for liberalisation in the literature are compared and assessed based on their relevance to the greenhouse gas mitigation options that were set out in the Intergovernmental Panel on Climate Change (IPCC) Assessment Reports.[7] Conclusions are drawn on the potential range of goods and services for liberalisation and evidence gaps are identified. A detailed explanation of the methods that were used is covered in individual chapters.

We identify how actions can contribute to a reduction in greenhouse gas emissions (i.e., climate change mitigation). The other aspects of the Paris Agreement on financing and adaptation are not covered. Likewise, the analysis does not consider how negotiations might contribute to other equally pressing and important environmental challenges, such as biodiversity loss. The choice of scope does not imply a prioritisation or a value judgement on the relative importance of the various issues.

Throughout the analysis, we integrate aspects of how an agreement could include the participation of developing countries. When we refer to developed and developing countries, we generally follow the approach in the WTO and adhere to their self-defined status. We recognise that there are other definitions[8] and make distinctions based on these categories when it is relevant to the argument.

In parallel with our analytical work, we discussed relevant matters with officials from the European Commission, the WTO Secretariat, the Organization for Economic Co-operation and Development (OECD), the International Institute for Sustainable Development (IISD) and the World Economic Forum as well as other trade policy experts.

7 Intergovernmental Panel on Climate Change (2014). The next IPCC mitigation report is due to be published in the spring of next year, which could coincide perfectly with a potential start date for negotiations and provide an updated evidence base.

8 E.g., the World Bank's country classifications by income level and the UNs list of the least developed countries.

2 Climate, trade and trade liberalisation

This section gives an overview of the relationship between trade and the climate and sets out some of the key arguments for negotiating an agreement to liberalise climate-relevant goods and services as well as for reforming fossil fuel subsidies. It also covers the reasons for including provisions to encourage the participation of developing countries.

The climate impact of trade liberalisation

Liberalisation of trade affects the climate by means of several channels. *Direct impacts* are caused via emissions from shipping and transportation.[9] *Indirect impacts* occur when trade generates economic growth and therefore emissions (the scale effect); changes the location of production which, depending on relative practices, can have positive or negative climate effects (the composition effect); and by the dissemination of modern technologies which often reduce emissions per unit output (the technique effect).

The *technique effect* is the primary channel through which an agreement to liberalise trade can contribute to emission reductions as reductions in tariff and non-tariff barriers to trade in climate goods and services help to spread clean technologies.[10]

A trade agreement can also facilitate trade in materials, goods and services relevant to circular business models,[11] reducing emissions by avoiding raw material extraction, processing and transportation.

In addition, an agreement can work towards limiting the scale effect by removing fossil fuel subsidies which encourage greenhouse gas emissions and work against climate and other environmental goals.

Why liberalise climate goods?

Climate ambitions require reform to industries that trade components, parts and finished goods, and a simple and compelling reason for liberalising trade in climate goods is to minimise the cost of combined global mitigation efforts. For example, building low carbon energy systems can be done at a lower cost when the tariff (and other) barriers to trade in the goods and technologies used to build those systems are minimised.

With modern, integrated supply chains in which components and parts cross borders several times in the completion of a product, the cumulative impact of tariffs can add up for even low tariff levels. Thus, removal of low-level tariffs on climate-relevant goods can reduce costs and be a useful contribution to climate mitigation,[12] especially in situations in which clean technologies are competing on cost with dirty technologies. In addition, supply chain integration facilitated by international trade leads to efficiencies which lower costs for low carbon technologies.[13] Tariff reduction can also contribute to further supply chain integration.

9 The European Commission (2021); note that these emissions make up a relatively small proportion of global totals, with mitigation efforts in other sectors contributing to their reduction.

10 Garsous (2019) showed that although the total imported emissions to the OECD rose between 1995 and 2011, the technique effect slowed the growth of emissions from those imports, thereby helping to offset the increase from the scale and composition channels. The report also showed that the carbon intensity of imports to OECD countries has declined.

11 This could include goods and services relevant, for example, to technologies for material sorting, recycling and remanufacturing.

12 De Melo & Solleder (2019a).

13 Vossenaar (2014).

Furthermore, traded goods are affected by non-tariff measures.[14] Even though many serve legitimate aims, they can raise costs, hamper trade and economic development and have restrictive and distorting effects on trade. Several reports also show that non-tariff measures (NTMs) have a bigger impact on trade than tariffs.[15] This is the case in almost all sectors.[16] According to research from the OECD, the contribution of non-tariff measures to the restriction of market access may in some cases be three times as large as that of tariffs.[17] Although estimates of the costs of NTMs should be interpreted with caution, they do suggest that including non-tariff barriers (NTBs) could have a more significant impact on trade facilitation than tariff reduction alone.

Why liberalise climate-relevant services?

The rationale for liberalising services trade is that many climate-relevant goods are complex and are thus dependent on accompanying services (see text box on wind farms); in addition, services can help spread knowledge and facilitate action relative to greenhouse gas mitigation.

The *servicification of environmental goods* means that the development of the environmental sector through trade depends as much on access to services[18] as it does to goods. Indeed, companies often sell goods in a package that includes the accompanying, often essential services. The complexity of many environmental goods[19] requires specific expertise for installation and operation, and these services are not always available or marketed in every country. This makes services trade essential and suggests that the benefits of reduced tariffs and NTBs are likely to be much greater if accompanied by service liberalisation along the value chain.

As is the case for climate-relevant goods, the removal of trade barriers for services is an effective way for countries to reduce the costs of mitigation targets by facilitating the spread of more effective technologies at lower prices. Furthermore, import barriers for climate-relevant goods and services also harm export industries due to negative effects on the competitiveness of companies that are engaged in global value chains.[20]

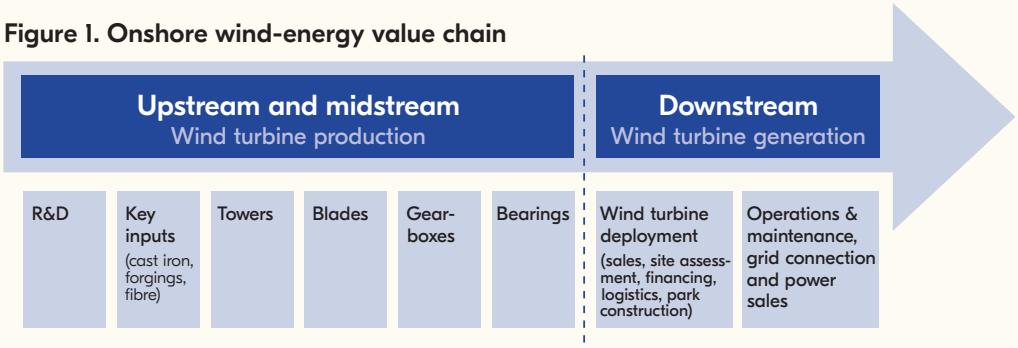
14 UNCTAD and the World Bank (2018), p. 1.
15 UNCTAD and the World Bank (2018), p. 1.
16 UNCTAD and the World Bank (2018), p. 2.
17 OECD (2018), p. 4–5.
18 Swedish National Board of Trade (2014).
19 Sauvage & Timiliotis (2017).
20 Sauvage & Timiliotis (2017).

Example

Wind Farms: the interplay between goods and services in global value chains

Wind turbines contain around 9,000 components[21] that are traded in global value chains. Design, knowledge and technical know-how are critical[22] to the manufacture of the high-quality wind turbines that can compete with dirtier technologies.

Figure 1. Onshore wind-energy value chain



Source: OECD (2015)

The manufacture of turbines begins with design and R&D and the assembly of parts and components for the towers, blades, gearboxes and bearings. Trade is essential to the global sourcing of inputs.

Table 1. Simple applied MFN tariffs* in 2020 for selected wind turbine components, three largest carbon emitters

	European Union	United States	China
Towers and lattice masts (HS 7308.20)	0%	0%	8%
Other engines and motors (HS 8412.80)	4,2%	0%	10%
AC generators of an output exceeding 750 kVA (HS 8501.64)	2,7%	2,4%	2,4%
Other electric generating sets and rotary converters; wind-powered (HS 8502.31)	2,7%	2,5%	5%

*The simple average MFN tariff calculated at HS6 level.

Tariff barriers exist at relatively low levels for the largest emitters alongside barriers to trade in services and NTBs, such as local content requirements,[23] which impede trade in wind power plants.

Constructing a wind farm requires environmental consultants to identify' a suitable location and prepare an environmental impact assessment; financial and consulting services are needed in the project development stage; and specialist delivery firms ensure the delivery of parts. Assembly, construction, testing, IT, monitoring, grid connection and maintenance services are also essential.

This illustrates the complex and mutually important nature of goods and services in the delivery of a key greenhouse gas mitigation technology.

21 OECD (2016).
22 Garsous and Worack (2021)
23 United States International Trade Commission (2009).

The case for fossil fuel subsidy reform

Fossil fuel subsidies have detrimental effects on global economic welfare via trade distortion, inefficient fiscal policy and environmental damage caused by the additional carbon emissions they generate. Their reform is also recognised as a vital component of the transition to a sustainable future.[24] The scale of the challenge is huge; estimates undertaken during the last 10 years have valued annual global fossil fuel subsidies at between $345 billion and $691 billion.[25]

Climate change is recognised as the world's largest and most wide-ranging *externality*[26] as the costs associated with greenhouse gas emissions do not fall on those creating the emissions. An optimal policy response is global carbon pricing to reflect the damage greenhouse gas emissions cause and transfer the costs to polluters and incentivise necessary reductions.[27] Subsidisation of fossil fuels does the opposite by lowering their prices and encouraging over production and consumption.

Fossil fuel subsidies also distort trade by causing changes in the relative prices between goods that use fossil fuels in the value chain and between fossil fuels and renewable energy. Investment decisions are also distorted by fossil fuel subsidies which lock energy systems into carbon intensive technologies. As energy investment cycles are often 30 or more years,[28] the negative climate consequences of these subsidies have a long lifespan.

As unilateral removal of fossil fuel subsides can be undermined by carbon leakage, a loss of competitiveness and political opposition, there is a need for concerted action by a substantial share of the global economy. The WTO is seen by many as the natural home for fossil fuel subsidy reform as the organisation has experience in defining and disciplining other subsidies and has a set of rules and institutions that could be drawn upon, including a dispute settlement mechanism. Furthermore, it would not be the first time an agreement with an environmental objective was handled within the organisation, as it already has experience with negotiating disciplines for fishery subsidies.[29]

24 ICTSD (2018).
25 Fossil Fuel Subsidy Tracker, fossilfuelsubsidytracker.org, which uses the definition from the SCM Agreement as a base to define a fossil fuel subsidy. The estimate is based on data from IEA, OECD and IMF.
26 Stern (2007).
27 While it is beyond the scope of this study, an agreement to price carbon with external border charges to deal with leakage would maximise climate and economic benefits compared to fossil fuel subsidy reform alone.
28 IEA (2021).
29 WTO | Factsheet: Negotiations on fisheries subsidies.

Participation of developing countries

The preamble to the WTO Agreement specifies that international trade should aim to benefit the economic development of the developing and least developed countries (LDCs). More than three fourths of the WTO's 164 members have identified themselves as developing countries, and their participation is essential to the long-term success of an agreement.

Within the WTO system, developing countries can receive special and differential treatment (SDT).[30] This principle has also been confirmed in the UN's 2030 Agenda.[31] SDT can consist of trade preferences, technical assistance or relief from certain commitments in the WTO agreements, such as longer transitional timeframes or periods for implementation. Some provisions are voluntary or 'best endeavours' while others are legally binding. Since a member country can choose to be defined as a developing country in the WTO, SDT has been increasingly debated over the years.

Agreeing on SDT in different negotiations is an enormous challenge. In essence, it is about how to agree upon and maintain an appropriate balance of rights and obligations among the highly diverse members in light of their different perceptions, needs and priorities in trade relations. [32] Bearing in mind the objectives of the WTO Agreement, the commitment in the UN's Agenda 2030 and the goals of the Paris Agreement, it may, however, be necessary to include such provisions in a future climate agreement. In addition, given the critical importance of enabling developing countries to take mitigation actions, SDT provisions should be considered in a pragmatic way and as a core part of negotiations.

30 It is apparent from point 44 in the Doha Ministerial Declaration that special and differential treatment is an integral part of the WTO agreement.
31 SDG Target 10(a).
32 Low, Mamdouh and Rogerson (2018), p. 4.

3 Trade in goods

This chapter considers the potential for and practicalities of tariff eliminations on goods for reducing greenhouse gas emissions (*climate goods*, see working definition in section 4.4) in a future WTO negotiation.

As much can be learned from previous negotiations,[33] the chapter begins by reviewing issues relevant to tariff negotiations on climate goods, which can be considered as a subset of environmental goods.[34] The chapter then analyses the potential range of climate goods that might be included and how to incentivise the participation of developing countries.

3.1 Previous environmental goods negotiations

The main issue in previous negotiations has been the divergence of positions on how to define and select environmental goods[35] for liberalisation. The same issues are pertinent in defining climate goods.

The Asia-Pacific Economic Cooperation (APEC) environmental goods negotiations[36] which were successfully concluded in 2012 utilised the OECD/Eurostat definition[37] to identify goods and services suitable for accelerated trade liberalisation. The definition requires environmental goods and services to have an environmental end use in terms of environmental protection or resource management.[38]

However, the end use criteria in the OECD/Eurostat definition creates two main problems. First, how to manage dual use goods that have both an environmental and a non-environmental end use.[39] Second, the definition fails to include environmentally preferable products (EPPs) which cause less environmental damage in production, consumption or disposal than substitute goods.[40]

With no ideal definition and a range of lists identifying environmental goods,[41] definitional issues are an important part of negotiations. While a clear definition would be desirable,[42] it is not vital as the APEC and Environmental Goods Agreement negotiations overcame the challenges by using definition-by-listing and definition-by-category approaches.[43]

33 Doha Round, APEC and Environmental Goods Agreement.

34 E.g., renewable energy goods have a clear climate link whereas other environmental goods have only a weak link to CO2 emissions, for example, eco-friendly fishing nets. It is difficult, however, to precisely specify the relationship between climate and environmental goods when there is no agreed definition on what constitutes an environmental good.

35 The EGA negotiations ultimately failed to agree on a list of goods due to difficulties I negotiation. A further illustration of the difficulty was when the 2008 Committee on Trade and Environment Special Session (CTESS) Work Programme aimed to determine potential environmental goods to include in an agreement by a process whereby WTO Members submitted lists of environmental goods. Although a limited number of countries participated (including only one developing country), there was little overlap between the lists.

36 In 2012, the countries of the Asia-Pacific Economic Cooperation Forum (APEC) agreed to a list of 54 environmental goods for tariff reductions to 5 percent or less.

37 'The environmental industry consists of activities which produce goods and services to measure, prevent, limit or correct environmental damage to water, air and soil, as well as problems related to waste, noise and eco-systems. Clean technologies, processes, products and services which reduce environmental risk and minimise pollution and material use are also considered part of the environmental industry' OECD (1996).

38 Eurostat (2009).

39 E.g. a pipe can be used in a wastewater plant or to transport oil, World Bank, (2008).

40 Balineau & De Melo, (2013) (for e.g., recycled paper or sustainable building goods).

41 See Sugathan (2013) for a review of seven different institutional settings in which lists have been produced. In addition, definitional issues are taken up in other fora, for example, the UN System of Environmental Economic Accounts and the CTESS.

42 Cosbey (2015).

43 See Cosbey (2015) for discussion of definitional approaches.

3.1.1 Environmental goods with dual uses

The dual use problem can be solved in three ways: through ex-outs which specify goods in more detail than is provided by the six-digit Harmonized System (HS) code; end-use procedure; or by liberalising the good for both environmental and non-environmental use.[44] The Environmental Goods Agreement negotiations made extensive use of ex-outs to include goods and inputs with dual uses.

3.1.2 Environmentally preferable products

Environmentally preferable products (EPPs) are defined in relation to alternative products, raising the question of where to draw the line on the scale from the most damaging to the most beneficial goods. Decisions can be informed by criteria like carbon footprint or lifecycle approaches.[45] However, these are subject to information gaps and methodological difficulties.[46] Even with lifecycle assessment, setting thresholds for preferability could prove difficult.

There are legal limitations on liberalising certain EPPs. The non-discrimination obligations (national treatment and most-favoured nation) in the GATT 1994 do not allow discrimination between 'like products';[47] for example, products with the same physical characteristics but with differing production emissions. A climate waiver[48] or an authoritative interpretation could be a long-term solution, but political complexity makes it questionable if it is realistic in the near future. We, therefore, do not consider it advisable nor desirable to include EPPs that are considered to be like products.

However, there are good climate reasons for including EPPs that can be readily identified, such as 'products distinguishable by some observable or measurable difference in their chemical or physical characteristics,'[49] and those with an HS code. The lists included in the negotiations of the Environmental Goods Agreement contained goods that the negotiators classified as EPPs, and the APEC list included bamboo flooring panels based on environmental preferability in production. Furthermore, WTO members can contribute to the development of specific HS codes for EPPs via cooperation in the World Customs Organization (WCO).

3.1.3 Technological advancement and review clauses

The fast pace of technological advancement and changing product features and standards means that lists can quickly become outdated.[50] Several commentators[51] have suggested that this can be dealt with by means of a so-called 'living list' or review clauses whereby negotiated lists are periodically reviewed to ensure their relevance. There are several precedents such as the Information Technology Agreement (ITA) which was designed as

44 Kim (2007).
45 The consensus in the literature is that life cycle approaches are the best (though not the easiest) way to measure preferability as they consider the production, consumption and disposal of the good in question across multiple environmental domains.
46 For example, how to consider differential treatment of the same goods in use and disposal (Hamway, 2005).
47 Article I and III of the GATT 1994.
48 A waiver would allow discrimination of like products based on embodied carbon (see Bacchus, 2018). Similarly, a universal labelling system has been proposed as an extension to the Harmonized System (HS) (Balineau & De Melo, 2013), though the cost of this might outweigh the benefits if tariffs are low.
49 Steenblik (2005), p. 3.
50 Kim (2007).
51 De Melo & Solleder (2019a), Steenblik (2005) and Cosbey (2015) amongst others.

a so-called 'living agreement'.[52] The parties to the GPA also revised the text and expanded the coverage.

The concept of a 'living agreement' could also, however, be interpreted to include the removal of products (e.g., products no longer judged as environmentally preferable). A removal of products would, however, require renegotiation, modifications and withdrawals of tariff concessions pursuant to Article XXVIII of the GATT 1994, which may also include compensation to affected members. To avoid the need for time-consuming and burdensome renegotiation, reviews should only cover new additions and should not include the removal of products.

An agreement should ideally include clauses to ensure that review occurs every four or five years and that such a review is coordinated with HS code revisions so new codes can be added to the lists.

3.2 Categorisation under the Harmonized System and HS reform

The HS[53] is used in tariff negotiations which require that definitions align and conform to these classifications. There is no specific chapter for environmental goods, and the level of precision for descriptions within the HS for environmental goods varies between subheadings. Some six-digit subheadings identify a specific environmental good,[54] while other subheadings contain both environmental and non-environmental goods.[55]

While it is difficult to identify environmental goods with precision at the HS six-digit level, this has not proved to be a critical problem in previous negotiations in which so-called ex-outs have been used to specify goods in more detail than is provided by the six-digit code. This has been done by adding further sub-categorisations at 8-, 9- and 10-digit levels in a manner similar to that of nations and trading blocs for national and regional tariff schedules.[56]

The recent HS review for the 2022 tariff schedule added several new goods that are relevant to the climate[57] and which could easily be included in a negotiation. The forthcoming review of the HS for 2027 also offers an opportunity to specify further climate goods. Moreover, more precise codes allow for other trade policy instruments, such as rules of origin and standards, to be better aligned with climate policy. It would therefore be highly relevant for research to be conducted in collaboration with industry to identify technologies for inclusion in the HS and for eventual liberalisation. The parties to a plurilateral agreement could also commit to cooperation in the WCO to better align the HS nomenclature to support the climate transition.[58]

52 The ITA was designed as a living agreement in 1996, see para. 3 in Annex: Modalities and Product Coverage of the ITA. At the Nairobi WTO Ministerial Meeting in December 2015, an expansion of the agreement was concluded.

53 The HS is an international system developed by the WCO to identify goods and achieve a uniform tariff classification as well as to collect trade statistics. The HS provides countries with a common language for international trade, trade negotiations and trade statistics. The system is used by more than 200 countries and economies as a basis for their customs tariffs and for monitoring controlled goods (e.g. wastes, chemical weapons, ozone layer depleting substances and endangered species).

54 For e.g., HS 8502.31, electric generating sets, wind powered.

55 For e.g., HS 7308.20, towers and lattice masts, can be used not only for wind turbine towers but also for oil platforms.

56 UNEP (2014).

57 For e.g., energy efficient LEDs, new heavy electric vehicles, Steenblik (2020).

58 Members have taken a similar approach in other agreements. For example, the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) encourages WTO Members to actively participate in the work of international organisations relevant to the agreement.

A longer-term HS reform that could promote emission reductions would be the creation and eventual liberalisation of codes for complete industrial plants,[59] such as windfarms or recycling facilities. The industrial plant would then include all 'machines, apparatus, appliances, equipment, instruments and materials under various headings of the HS nomenclature and which are designed to function together as a large-scale unit'.[60] An industrial plant approach could significantly reduce costs as inputs from various non-environmental tariff headings could be liberalised.[61] However, the approach is not without difficulties, including burdensome customs clearance procedures.[62] Any eventual changes in the HS nomenclature will be decided in the WCO.

Having described the challenges in the selection of goods, we next analyse the range of climate goods that could be included in a negotiation.

3.3 A climate perspective

Just as Environmental Goods Agreement negotiations have created lists of environmental goods, goods relevant for the climate transition could be prioritised via a climate list.

The Environmental Goods Agreement was expected to have a small impact,[63] with trade in environmental goods estimated to increase by 1.1 percent and a cumulative CO2 reduction of 10 million tonnes between 2016 and 2030.[64] To contextualise, the cumulative global reduction is estimated to be less than a sixth of what Sweden's economy generates in a single year.[65] As Environmental Goods Agreement negotiations were based on lists with low average tariffs,[66] it is perhaps unsurprising that estimated impacts were low.

A logical step to increase the impact of an agreement is to include as many climate goods as possible as the starting point for negotiations and to prioritise based on mitigation potential. As negotiations bear a cost in terms of time, resources and political capital, it is important that the realised climate benefits are sufficient to merit the investment.

The Paris Agreement is based on countries' nationally determined climate ambitions. While countries use a mix of fiscal, legal, regulatory, informational and rights-based approaches in climate policy, the general process for policy development might be characterised as follows:

A. Set a carbon reduction target

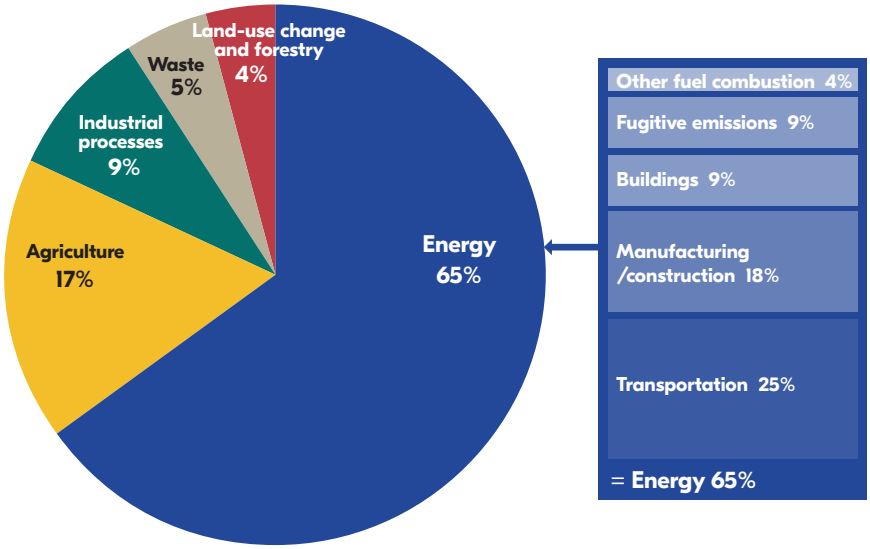
B. List potential mitigation and sequestration options economy wide and/or by sector

C. Assess the marginal abatement costs and political and practical feasibility of the options to form a national action plan.

59 HS contains 6-digit codes for food processing and brewery plants, Steenblik (2005).
60 HMRC (2021)
61 Vossenaar (2014).
62 See discussion in Steenblik (2005).
63 Development Solutions (2016).
64 The modelling approach is subject to limitations, for example, not fully capturing effects on GVCs and aggregation issues which make it difficult to capture effects at a product level. In addition, the modelling only partially captures the technique effect, includes dual use products that would not have been included under the agreement due to the use of ex-outs and addresses a different set of goods than those included in the EGA lists (due to confidentiality).
65 The impact assessment report contextualises the figures using CO2 equivalents for Cyprus (including international aviation and excluding LULUCF); the equivalent figure for Sweden in 2019 is 60.58 million tonnes of CO2 equivalents (source: SCB).
66 De Mello and Solleder (2019a); Vossenaar (2014).

A and C are country and context specific. However, for B, a menu of global mitigation options and technologies can be identified, thus capturing categories of goods relevant to all countries in the sectors producing the most emissions.

Figure 2: GHG Emissions by sector %, 2018



Source: World Resource Institute CAIT Country Greenhouse Gas Emissions

Most greenhouse gas emissions originate from energy used in transport, manufacturing, construction and buildings. Agriculture, industrial processes, waste, and land-use change and are the next largest sources of greenhouse gas emissions.

3.4 Analysis of existing lists which include climate goods

The analysis which follows covers eight lists,[67] five of which are climate specific. For the lists with a broader perspective than just climate, we used existing categorisations within the lists (e.g., the Environmental Goods Agreement lists have a cleaner and renewable energy category) and our own judgement as informed by our review of mitigation technologies mentioned by the IPCC in order to select goods we considered relevant to reducing carbon emissions. Some lists are from the end points of negotiations whereas others list possible goods for liberalisation. An important point is that most of these lists are dated and would need to be revised to account for the technological development that has occurred since their publication. However, they give a useful indication of potential within the largest emitting sectors.

The lists are composed in different ways, identifying finished goods with environmental end uses, inputs to those goods (e.g., materials, parts and components, often with dual uses) and EPPs and their various inputs.

A sub-category of production inputs that are not explicitly covered by the existing lists are what might be termed indispensable inputs. We define these as inputs with few or no sub-

67 The World Bank's climate-friendly goods list (The World Bank, 2007); the ICTSD lists of climate-friendly products for energy supply, residential and commercial buildings, and transport (Sugathan, 2013); the National Board of Trade Sweden's list of goods relevant to electric vehicles (National Board of Trade Sweden, 2020a); the Environmental Goods Agreement A and B lists; the OECD Combined List of Environmental Goods (CLEG) and the APEC environmental goods list.

stitutes (in the short run) but without which a climate or environmental good cannot be produced. For example, electric vehicles require rare earth metals for battery production and contain thousands of computer chips. While these inputs have applications across industries (dual uses), the ongoing chip crisis illustrates the significant impact an indispensable input can have on the production of climate goods. A key argument for negotiations is to facilitate the spread of climate-friendly technology, and negotiators should seek to identify and liberalise key indispensable inputs.

Reflecting the definition-by-listing approach,[68] the working definition that we used for climate goods covers finished goods, production inputs and EPPs of relevance to climate mitigation, including indispensable inputs and dual use goods and inputs but excluding EPPs for like products.

The analysis aims to highlight the potential to include climate goods in negotiations and not to identify a specific list of goods. As such, the analysis is carried out at the HS6 level[69] to provide a common key[70] for comparison. This is necessary because the lists are mostly composed of goods specified below the HS6 level (as ex-outs), and 80 percent of the HS6 headings on the lists[71] contain one or more ex-outs. Several goods are often specified under one HS code, and the analysis counts the total number of items (ex-outs) associated with those codes. We also included a count of unique entries as several codes appear on more than one list.

Table 2. The number of Climate Goods on existing lists

List	HS6 heading with a potential climate good	Total number of items specified under identified HS6 headings	Number of unique HS6 codes*	Items under unique HS6 codes**
APEC environmental goods list	38	104		
OECD Combined List of Environmental Goods	195	195		
Environmental Goods Agreement A and B lists	254	451		
ICTSD Buildings	49	70		
ICTSD Renewable Energy	85	296		
ICTSD Transport	83	301		
National Board of Trade electric vehicles list	50	80		
World Bank climate-friendly goods list	43	43		
Total	**Omitted to avoid double counting**	**1540**	**454**	**1125**

* Some codes feature on more than one list; columns shows count with double entries removed

** Several codes have more than one ex-out; the code with the highest item count is retained and the items counted

Table 2 shows that from the lists examined, there are 454 unique HS6 codes containing between 1,125 and 1,540 goods or inputs to production which are considered to be climate relevant. The conclusion from this analysis is that there is huge potential to identify and liberalise climate goods under a plurilateral agreement.

68 See Cosbey, (2015) for discussion.

69 As the lists are specified according to different editions of the HS, codes are converted using the UN Trade Statistics HS conversion tables (Correspondence Tables - United Nations Statistics Division), see methodology on the website note for limitations of the conversion approach. The 2012 edition which was used to compile the EGA lists is used for the analysis, with additional checks on goods changed between editions.

70 Standardising to a common key sacrifices accuracy but a direct comparison would require text analysis comparing the wording of the goods descriptions.

71 Excluding CLEG and the World Bank lists which do not specify below HS 6 level.

3.5 IPCC mitigation options and climate goods

The following analysis uses the IPCC's Fifth Assessment Report to identify gaps in the evidence base and suggest new categories of goods for liberalisation.

3.5.1 Summary of mitigation options

Table 3 shows examples of mitigation options for the sectors producing the most emissions.

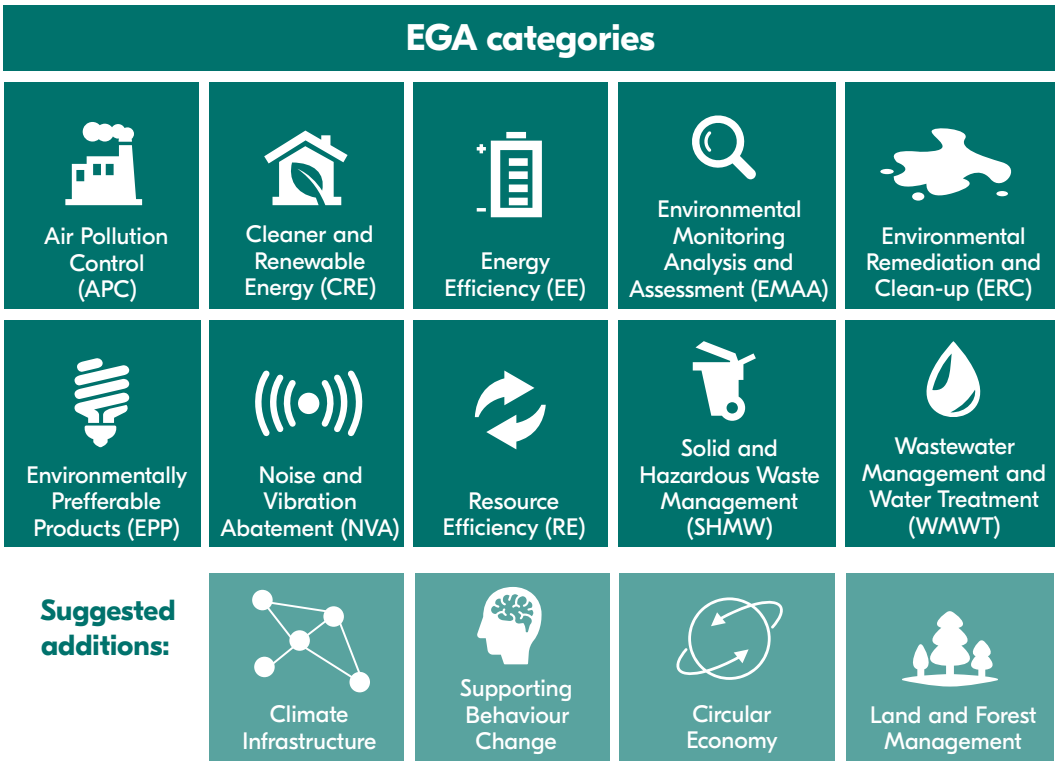
Table 3. Examples of mitigation options in IPCC's Fifth Assessment Report

Sector	Mitigation option
Energy Supply	• Energy efficiency in energy conversion, transmission and distribution • Renewable energy (e.g., wind, bioenergy, solar, geothermal, hydropower, ocean energy and energy storage) and nuclear power • Carbon capture and storage (CCS)
Transport	• Lower carbon vehicles (e.g., hybrid and electric vehicles) • Reduced carbon intensity of fuels (e.g., electric, hydrogen) • Infrastructure improvements for modal shift to public transport and non-motorised transport (cycling and walking) • Urban and transport planning and behavioural changes for a modal shift
Buildings	• Energy efficiency technologies (e.g., heating, ventilation, lighting) • Automation and control systems • Fuel switching to low CO2(e.g., electricity, biomass stoves, heat pumps) • Insulation • Design, urban form and standards, and behaviour and lifestyle change
Industry (and Waste)	• Technology adoption and innovation in energy and material efficiency • Shift from fossil fuels to low CO2 electricity and use of CCS • Demand and waste reduction, re-use and recycling and energy recovery • Landfill methane capture, landfill aeration, anaerobic digestion
Agriculture, Forestry and Other Land Use	• Reduce emissions from land-use change (LUC), land management (agriculture and forestry) and livestock management; reforestation • Conservation of carbon stocks and sequestration in soils and biomass • Food waste loss and changes in diet

3.5.2 Comparison with Environmental Goods Agreement categories

A comparison of the IPCC mitigation options against the categories used in the Environmental Goods Agreement negotiations[72] was undertaken to identify gaps that might be addressed with new categories (an additional benefit of adding categories is that it emphasises important technologies, thereby bringing focus to new areas of importance).

72 The APEC list and other lists have similar but not identical categorisation systems.



In the energy supply and transport sectors, it is difficult to classify infrastructural improvements, suggesting that a climate infrastructure category could be considered.

Planning, design, demand management and behavioural change options are important in the transport, industry and building sectors. While these are probably best addressed by services liberalisation, innovative products can also contribute, for example, safety equipment for cycling, sharing schemes and technologies for charging for the use of city roads. A behaviour change technologies category might be relevant.

In relation to industry and waste, there is potential to include technologies relevant for re-use, remanufacturing, recycling and recovery under a new circular economy heading.

Goods and services produced by the agriculture, forestry and other land use sectors are important for the climate transition (e.g., sustainable building products), as are technologies, goods and services that help the sector reduce net emissions. Mitigation options for these sectors require changes in the management of land, livestock and forests. Services liberalisation can facilitate knowledge transfer, but a range of technologies can support change (e.g., monitoring and measurement for optimised soil management or precision farming technology). A land and forest management technology category might be considered.

3.5.3 Comparison of IPCC mitigation options with goods lists

While a comprehensive identification of climate goods based on the mitigation options and technologies in the latest IPCC mitigation report is beyond the scope of this report, we make some observations based on a comparison of lists which contain climate goods. For instance, there is an apparent lack of an evidence base with respect to goods relevant to the Agriculture, Forestry and Other Land Use sector.

Although the lists contain goods relevant to climate infrastructure development, there are gaps that could be addressed by a new heading and a systematic approach. Similarly,

carbon capture and storage is relevant to several sectors but has limited coverage on the lists and could be prioritised.[73]

Several new technologies do not feature on the lists, reiterating that it is necessary for an agreement to adapt to technology change. The release next year of a new IPCC mitigation report will detail advances in emission reduction technologies and perhaps include general purpose technologies, such as sensors and biotechnologies that have been judged to effectively reduce emissions cost.[74] Updated research using a systematic approach to identify climate goods for high emitting sectors would be welcome.

3.6 Prioritisation of goods for selection

Assessment of goods in terms of their contribution to climate mitigation and sequestration is highly technical and thus requires specific expertise. The appointment of a body of experts to consider the credentials of climate goods would be a promising way to support negotiators. Such a group could comprise of experts in climate, industry and trade negotiation, and officials from the WCO.

An expert group could consider prioritisation based on goods judged to have the largest mitigation impact, indispensable inputs to these goods, or goods critical to climate transitions. For example, low carbon energy systems are a necessity upon which rests the effectiveness of other mitigation technologies like electric vehicles.

Economic factors can also inform prioritisation decisions. Goods have different sensitivities to price variations (price elasticities), meaning that demand and trade flows will respond differently to tariff reductions. For example, renewable energy and heat and energy management imports have been found to be more responsive to tariff reductions than other types of environmental equipment.[75] Capital costs are also a major determinant of the uptake of clean energy. For example, solar energy has capital costs at around 80 percent with operating costs at approximately 20 percent while the proportions are reversed for fossil fuels.[76] This is of particular relevance to some developing countries where access to[77] and cost of finance[78] can be a constraining factor to green investment. Inputs and goods that affect the capital costs of low carbon energy could therefore be prioritised and research be carried out to consider other climate goods that are likely to be the most responsive to tariff reductions.

3.7 Participation by developing countries

Despite relatively low trade volumes in environmental goods, lower income developing countries are expected to command an ever-larger share of world energy and resource use in the future. If development paths are not sustainable, the costs of the Paris Agreement are higher and the likelihood of success is lower. Many developing countries have few export interests in environmental goods and have higher tariffs on environmental goods.[79] Indeed, for low-income countries, tariff revenues in general can be an important income source.[80]

73 Particularly as cost is a limiting factor for CCS.
74 IPCC (2018).
75 The study reporting this finding (Jha, 2008) is now dated so new research would be required to confirm the finding still holds.
76 Araya (2016).
77 UNEP (2016).
78 Ameli, N. et al (2021).
79 Balineau, G. & De Melo, J. (2013).
80 UNCTAD (2009).

There has been limited participation in previous environmental goods negotiations by developing countries.[81] With low tariffs at negotiating partners' borders, there is less to gain from an export perspective and a concern that imports could disrupt home industries and employment.[82]

However, from a climate perspective, the incentives should be stronger. The benefits are cheaper access to low carbon technologies, welfare gains from improved environmental management and opportunities to participate in global value chains for climate goods.

Suggestions to encourage the participation from developing countries include broadening the scope of negotiations to encompass, for example, more EPPs,[83] certain manufactured and chemical goods used to deliver environmental services[84] and agriculture-based products[85] for which some developing countries have a comparative advantage.[86] This could be achieved through the adoption of a special climate waiver for EPPs.

Other suggestions include providing support to identify and list goods of interest for developing countries and capacity building. This type of assistance could, for example, be provided by enhanced Aid for Trade targeted for these negotiations. To encourage developing countries' participation in an agreement, various SDT provisions could also be included, for example, longer transition periods for tariff reductions. Another option could be to link the tariff reductions to commitments by the other participants to provide technical assistance, as in the Agreement on Trade Facilitation (TFA).

81 China, Costa Rica and Turkey participated in EGA and are defined as developing by the UN and as upper-middle-income countries by the World Bank.
82 Jha (2009).
83 UNCTAD (2009).
84 Hamway (2005).
85 Jha (2009).
86 De Melo & Solleder (2019b).

3.8 Conclusions and recommendations

To conclude, tariff elimination for climate goods reduces the cost of mitigation actions, promoting the spread of climate friendly technology and the freer flow of goods across borders. In addition, there is increased political support for a renewed focus on trade liberalisation to promote environmental sustainability.[87] We therefore recommend that negotiators aim for **zero tariffs for climate goods and their production inputs.**

Our analysis of existing goods lists and our review of mitigation technologies identified by the IPCC has revealed an extremely wide range of climate goods and inputs which have the potential for liberalisation. Our suggestion would be **to include as many of these goods as possible in the negotiations,** as well as to include what we define as indispensable inputs: inputs with few or no substitutes but without which a climate good cannot be produced.

Our review of mitigation technologies identified by the IPCC has also revealed areas with the potential to supplement categories that have been used in previous negotiations. In order to focus on important technologies for mitigation, **we suggest negotiations include four new categories: climate infrastructure, technologies to support behaviour change, circular economy, and agriculture, land and forest management.**

As a result of our review of how previous negotiations have handled goods with dual uses in both climate and non-climate applications, we conclude that **dual use goods should be included** as long as they are carefully specified to target climate uses. Similarly, environmentally preferable products have the potential to contribute to climate goals, and although they pose challenging methodological questions, we think they should be judged on their merits during negotiations. The exception is EPPs that are considered to be *like products* and, in the absence of a climate waiver or an authoritative interpretation, can be ruled out to avoid legal uncertainty and conflict.

Assessing and prioritising the contribution of goods to climate mitigation is technical and requires specific expertise. Appointing **a body of experts to provide guidance on the climate credentials of goods** would be a promising way to support negotiators' assessments.

To deal with technological advancement, changing product features and moving product standards we recommend that the agreement includes **review provisions** so that additional goods can be added along with clauses to ensure that review occurs every 4 or 5 years.

Given that the participation of developing countries is highly desirable from a climate perspective, **we recommend that capacity building, funding for technology transfer and inclusion of goods of relevance to the interests of developing countries form a core part of the negotiations.** As in the TFA, some commitments by developing countries could also be linked to provisions of assistance from developed countries.

The realisation of the benefits of liberalisation will require countries to devote resources and political capital. A clear climate mandate and statement of purpose could help channel political momentum which could contribute to the common goals of the Paris Agreement.

87 Demonstrated in the TESSD and with the European Commission's non-paper on a possible Trade and Climate initiative in the WTO (see section 1.1).

4 Non-tariff measures

In this chapter, we will discuss the potential for and importance of including non-tariff measures (NTMs), particularly non-tariff barriers (NTBs) and technical barriers to trade (TBT), in a future WTO agreement.

4.1 Non-tariff measures

Technical regulations and TBT are the most frequently used types of NTMs, and they pose a particular challenge for trade in industrial goods, including environmental and climate-relevant goods.[88] Sanitary and phytosanitary (SPS) measures are the most prevalent amongst agricultural products,[89] affecting, for example, EPPs such as bamboo.[90]

In general, developed countries regulate products more extensively than do developing countries, and thus they introduce more NTMs which disproportionately affect trade with low-income countries and smaller producers.[91] Data from UNCTAD shows that developed countries use three times as many TBT measures as do developing countries.[92] Even though most NTMs are applied equally to domestic and foreign products, low-income countries face higher average relative costs (ad valorem equivalents) on their exports as compared to high-income countries.[93] This is due to the costs of compliance and, for example, the fact that these countries tend to export more agricultural products which face NTMs to a greater extent than do other products.[94] It has therefore been argued that low-income countries are more in need of support to cope with NTMs and regulatory compliance than they are of special treatment for tariffs.[95]

As there are so many different types of NTMs and the harmful ones are difficult to identify, it has been suggested that the focus of a climate agreement should instead be on harmonisation and regulatory recognition.[96] The reduction of procedural obstacles would be a means to reduce trade costs without compromising the underlying policy aims of the relevant NTM.[97]

Facts

NTMs

All kinds of measures besides ordinary customs tariffs and tariff-rate quotas that can potentially have an economic effect on international trade in goods, changing quantities traded or prices or both.

NTBs

A subset of NTMs consisting of traditional trade policy instruments, which directly aim at influencing the quantities or prices of traded goods. Usually with a *protectionist intent* as well as disciminatory and protective nature.

88 OECD (2018), p. 10.
89 OECD (2018), p. 10.
90 Jacob & Møller (2017).
91 For more information, see UNCTAD and the World Bank (2018), p. 20.
92 UNCTAD and the World Bank (2018), p. 1, 2 and 19.
93 UNCTAD and the World Bank (2018), p. 2.
94 UNCTAD and the World Bank (2018), p. 2.
95 UNCTAD and the World Bank (2018), p. 20.
96 De Melo & Solleder (2019a), p. 19 and Jacob & Møller (2017), p. 44.
97 UNCTAD (2015), p. 2.

4.2 TBT — mutual recognition and harmonisation

NTBs in the form of TBTs can be addressed through various regulatory tools. There are different options ranging from information exchange to mutual recognition or harmonisation depending on the level of ambition. The WTO Agreement on Technical Barriers to Trade (TBT Agreement) encourages and provides a foundation for transparency and information exchange as well as for mutual recognition and harmonisation.[98]

One option for addressing TBTs is to conclude a plurilateral *Mutual Recognition Agreement* (MRA) on conformity assessment for climate goods.[99] Typically, MRAs on conformity assessment mean that the conformity assessment bodies of one of the parties can assess products for export against the requirements of the other party and vice versa. This could reduce costs associated with the need to test products in export markets. For example, barriers related to conformity assessment are problematic for exporters, particularly for small- and medium-sized enterprises (SMEs),[100] and for exporters in developing countries.[101]

TBTs can also be addressed through increased harmonisation using international standards, which can reduce the need for manufacturers to comply with differing regulatory requirements across export markets.[102] However, the TBT Agreement does not define which standardisation organisations should be considered in the development of international standards. In cases in which there are existing international standards that are relevant to climate goods, harmonisation could be promoted by referring to these standards or organisations in an agreement.[103] Another option could be to develop international standards relative to climate goods.[104] The identification of focus areas for the development of standards would, however, require experts with specific competence in standardisation and climate mitigation who have judgement based on products and sectors critical to the climate transition. Areas with potential might include building standards, decarbonised fuels including offshore wind and hydrogen technologies, batteries, passenger and freight transport, and product design and recycling standards for circular economy business models.

Finally, TBTs can be addressed through increased transparency and information exchange (e.g., notification obligations).[105] Besides the notifications under existing rules, members could go beyond the TBT Agreement and include more far-reaching transparency provisions. Such provisions could, for example, include notification of a broader scope of regulations than that mandated by the TBT Agreement, exchange of information on planned technical regulations or exchange of additional information regarding proposed regulations. Such transparency measures are relevant from a climate point of view.[106]

98 See, for example, Articles 2.4, 2.9, 5.4 and 6.3 of the TBT Agreement.
99 Sugathan (2016), p. v.
100 Sugathan (2016), p. 3 and 10.
101 UNCTAD (2016), p. 49.
102 UNCTAD (2016), p. 49—50.
103 OECD (2020), p. 4. For example, Article 7.6 in the EU—Japan Free Trade Agreement lists certain organisations that are considered to be able to develop international standards, and those include standards relevant for environmental protection.
104 European Commission (2016), p. 49.
105 Article 2.9 and 5.6 of the TBT Agreement. The number of TBT notifications has significantly increased over the years, and in 2020, more than 3,000 notifications were submitted to the WTO by members, see Notification report — Technical Barriers to Trade (wto.org).
106 For instance, a study from the OECD (OECD 2020, p. 24) underlines that increased information sharing, for example sharing of scientific data, can lead to regulations of higher quality and thus benefit the environment.

4.3 Participation of developing countries

As previously mentioned, it would be important to provide trade-related capacity building and technical assistance to developing countries along with opportunities to benefit from regulatory tools and arrangements such as a Mutual Recognition Agreement (MRA). As in the TFA, some commitments from developing countries could be linked to the provisions of assistance from developed countries. Technical assistance could be focused on various aspects related to the national quality infrastructure, for example, the development of technical regulations and regulatory impact assessments and participation in standardisation as well as testing and certification of products. This is important to ensure, among other things, that producers in developing countries are able to demonstrate that their products meet relevant requirements and to ensure that the standards take into account the conditions in developing countries.

A key challenge with regards to the negotiation of an MRA is that many developing countries lack an effective national quality infrastructure with, for example, competent bodies to carry out conformity assessment. Therefore, there is a need to support low-income countries in particular to demonstrate compliance with technical regulations.[107] As a result, trade-related capacity-building and technical assistance will be important in order to provide developing countries with opportunities to benefit from regulatory tools and arrangements such as an MRA.

4.4 Conclusions and recommendations

To conclude, NTBs should be included in the negotiations as this would increase the economic and mitigation impact of an agreement. As TBTs are among the most prevalent NTMs and are of key importance, **we recommend that TBTs be specifically addressed.** This could be done through a number of mechanisms, for example, information exchange, an MRA on the recognition of the results of conformity assessment procedures related to climate goods or through further commitments on harmonisation with international standards that are relevant to climate goods. Some of these regulatory tools, particularly MRAs, require a high level of trust between parties as well as an in-depth understanding of the respective regulatory systems which can bring challenges in a context in which many different countries are involved. Moreover, a particular challenge would be the lack of national quality infrastructure in certain countries and the connected need for capacity-building for such countries to be able to benefit from an MRA. Other approaches with a somewhat lower level of ambition, such as provisions on information exchange, could be used as a first step to build trust for each other's regulatory systems.

It is also important that **further commitments on harmonisation with international standards that are of relevance to climate goods are made**. This could, for example, be done through a clarification of the standardisation organisations that are considered to be able to develop international standards.

In order to encourage the participation of developing countries in a plurilateral agreement, we suggest that **trade-related capacity-building within TBTs be intensified**. As in the TFA, some commitments by developing countries could also be linked to the provisions of assistance from developed countries.

107 UNCTAD and the World Bank (2018), p. 20.

5 Trade in services

Trade in services facilitates the spread of knowledge and innovation and the use of more effective mitigation technologies. A liberalisation of trade in climate-relevant services would therefore help countries reduce the costs of meeting mitigation targets. In this chapter, we look at the inclusion of services in future negotiations with a specific focus on the definition of services relative to climate mitigation and how they could be included in new negotiations and an agreement. As the existing literature relates to environmental services, we start from this perspective before going into specific detail for climate-relevant services.

5.1 Definition of environmental services in the WTO

The definition of environmental services in the GATS and WTO was introduced in 1991 when the WTO's Services Sectoral Classification List[108] (referred to as the W/120 list) was drawn up to negotiate the GATS. This list was based on a provisional version of the UN's Central Product Classification (CPC) and listed four classes of environmental services and their corresponding CPC codes[109] under heading 94:

A. Sewage services 9401
B. Refuse disposal services 9402
C. Sanitation and similar services 9403
D. Other[110]

Although the CPC has undergone revisions, heading 94 remains narrowly defined, with a focus on roughly the same four categories as the original. The most recent update of the list (CPC 2.1) makes no reference to climate or greenhouse gas emissions.

Although countries are encouraged by GATS guidelines to refer to CPC codes to give legal clarity and to evaluate commitments against the schedule, there is no obligation to refer to the W/120 or CPC lists under the GATS. However, WTO members often continue to use these lists for service scheduling in the WTO.[111]

Another element of the definition of trade in services that is of importance to negotiations on services is the division into the four delivery modes defined under Article I:2 of the GATS (see table 4). WTO members separately commit to undertakings for each mode in their Schedule of Specific Commitments (services schedule). This means a sector can be fully committed for cross-border supply (Mode 1) but unbound for all other delivery modes.

Table 4. GATS modes of supply

Delivery mode/description	Example climate-relevant service
Mode 1 — cross-border supply	Remote monitoring of wind turbine
Mode 2 — consumption abroad	Engineer receives training abroad
Mode 3 — establishment of commercial presence	Subsidiary provides consulting on selection of a site for a renewable energy installation
Mode 4 — presence of natural persons	Foreign expert provides reparation service for a wind farm.

Source: Based on examples from WTO and Steenblik & Geloso Grosso (2011)

108 MTN.GNS/W/120.
109 WTO (2010).
110 Other includes the remaining four environmental service CPC codes.
111 APEC (2021).

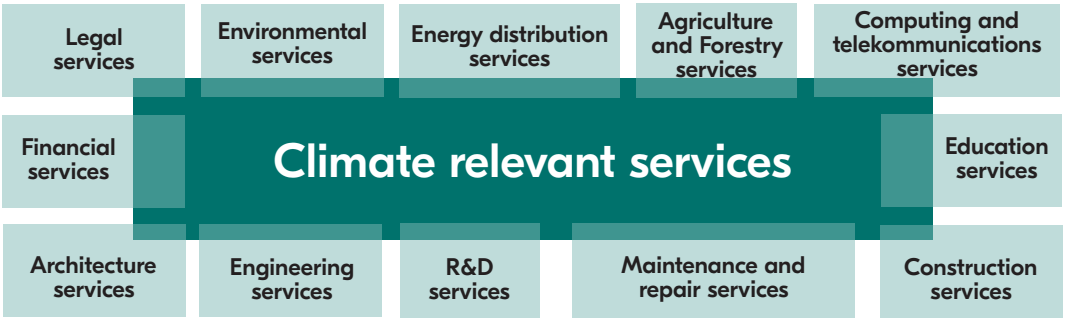
5.2 Broadening the definition of environmental/climate services

Although there has been a longstanding debate on the definitions of environmental services, including within the WTO, the OECD and academia, there is no satisfactory, clear and agreed upon definition of what constitutes an *environmental* or a *climate-relevant service*. What is clear is that the core services definition under heading 94 does not adequately capture the environmental services which are required to address global environmental challenges.

The core definition is narrow and fails to include climate or renewable energy services.[112] Research has suggested that the definition should be expanded to include non-core,[113] indirect[114] and indispensable[115] environmental services. This would help to better capture the wide range of services (defined under non-environmental headings in the CPC) that to varying degrees facilitate the functioning of environmental goods or deliver an environmental benefit.

The fact that so many different services can be considered relevant to solving climate problems creates a challenge for negotiators.[116] A promising solution is a cluster approach, which has already been used for energy and related services.[117] A cluster approach would group services based on their contribution to climate-related activities. This means services can be identified for liberalisation without having to reform the existing classification system.[118]

Indicative cluster of climate relevant services



Source: Adapted from Steenblik and Geloso Grosso (2011)

Criticisms have been levelled at the cluster approach based on objections to the liberalisation of dual use services at the CPC code level that could lead to unintended but much wider liberalisation than just for climate purposes.[119] For example, engineering services can be used for solar power projects and for oil extraction. A wider than intended definition could also deter countries that are wary of broad liberalisation from joining the initiative. However, this issue might be overcome by a specific clarification of a climate end use

112 Sauvage & Timiliotis (2017).
113 Kim (2011).
114 Jacob & Møller (2017).
115 Services sold as a package with an environmental good and without which the good cannot function, National Board of Trade Sweden (2014).
116 Kim (2011).
117 For e.g., energy distribution, technical testing and analysis.
118 Steenblick and Gello Grosso (2011).
119 APEC (2020).

in GATS schedule commitments.[120] This would work in much the same way as ex-outs are used to specify climate goods.[121] Services would be specified in more detail than the CPC code to make the climate application for liberalisation clear. An example is when 'General construction of power plants' (CPC 2.1 code 54262) is specified as an ex-out so as to only cover 'Plants powered by renewable energy'.[122]

Considering non-core services, such as engineering or architecture, as climate-relevant would then depend on the end use of the service and whether that relates to a climate purpose. The OECD[123] considers the environmental purpose of a service as a matter of degree. The degree to which a service is environmental can be determined by two factors: (1) how important that service is to the core functioning of a good or service (market operation), as well as (2) how important it is relative to other services for enabling an environmental technology (relativity).[124] Telephony services are cited as essential to the functioning of a wastewater plant (meeting the market operation criteria) but are relatively unimportant in relation to other services such as maintenance of the plant (so would score low on the relativity criteria). This would suggest the import of telephony services might not be critical to the operation of the plant in the same way that the import of maintenance services could be.

A final point of similarity to climate goods is the rapid technological development which affects services. Negotiated agreements need to adapt to the changing technological landscape or define services broadly enough to be technology neutral in order to stay relevant. However, as it is difficult to predict future technological development, it would be highly appropriate to include revision clauses in a plurilateral agreement for services as well as for goods (see section 3.1.3 for more information).[125] A revision clause can also ensure the issue is discussed again in the future, which may result in the inclusion of a broader range of services.

5.3 Climate-relevant services

We suggest three potential categories for use in identifying the climate purpose of a service in order to include it in a cluster:

1. Services which provide a climate benefit[126] as essential elements of mitigation technologies/goods (e.g., assembly services or operating software services) or as enabling factors (e.g., advice on energy efficiency).
2. Climate services that can indirectly motivate change (e.g., education, research, information provision).
3. Services relevant to circular business models that reduce the climate impact of raw material extraction, processing and transportation (e.g., recycling services, maintenance services to extend product lifespans).

A range of studies[127] have identified climate-relevant services, naming over 200 services that can be considered climate-relevant although there is a degree of overlap and various

120 Kim (2011), p. 3.
121 APEC (2021); Kim (2011).
122 APEC (2021), p. 68.
123 Sauvage & Timiliotis (2017).
124 Nielson et al. (2001) cited in Sauvage & Timiliotis (2017).
125 As with goods, we only recommend that additional services be liberalised since the removal of existing service commitments would require renegotiation, modifications and withdrawals of commitments pursuant to Article XXI of the GATS.
126 It is important to consider the net effect as some services that serve a climate end use can have negative climate effects depending on how they are delivered (for example, technologies like blockchain offer a number of climate-relevant services, but if they are reliant on coal powered electricity, they could have a negative net climate effect).
127 APEC (2021, 2020); Sauvage & Timiliotis (2017); Tamminen et al. (2020); National Board of Trade (2020a); National Board of Trade (2014); and WTO (2000).

methods are used. For example, certain services are repeatedly mentioned (e.g., engineering and architecture) but in some cases, with different applications related to different mitigation options or across sectors. As these studies specify services differently,[128] it has not been possible to systematically compare suggestions. However, based on the lists reviewed, we can conclude that there are a large number of climate-relevant services that could be targeted for liberalisation.

The methodological approaches taken in previous studies are also relevant to informing discussions, as services have had less attention in previous environmental negotiations than have goods. The studies looking specifically at climate-relevant services[129] are based on a review of services related to mitigation technologies from the then-current IPCC Assessment Report (the fourth). An advantage of beginning from IPCC reports is that they are neutral, evidence based and identify mitigation options with the potential to be applied in most countries. Furthermore, linking the liberalisation of services to the evidence on climate change mitigation provides a strong rationale for negotiation. On this basis, the selection of climate-relevant services should as far as possible be considered from an objective, climate perspective based on a review of services relevant to mitigation.

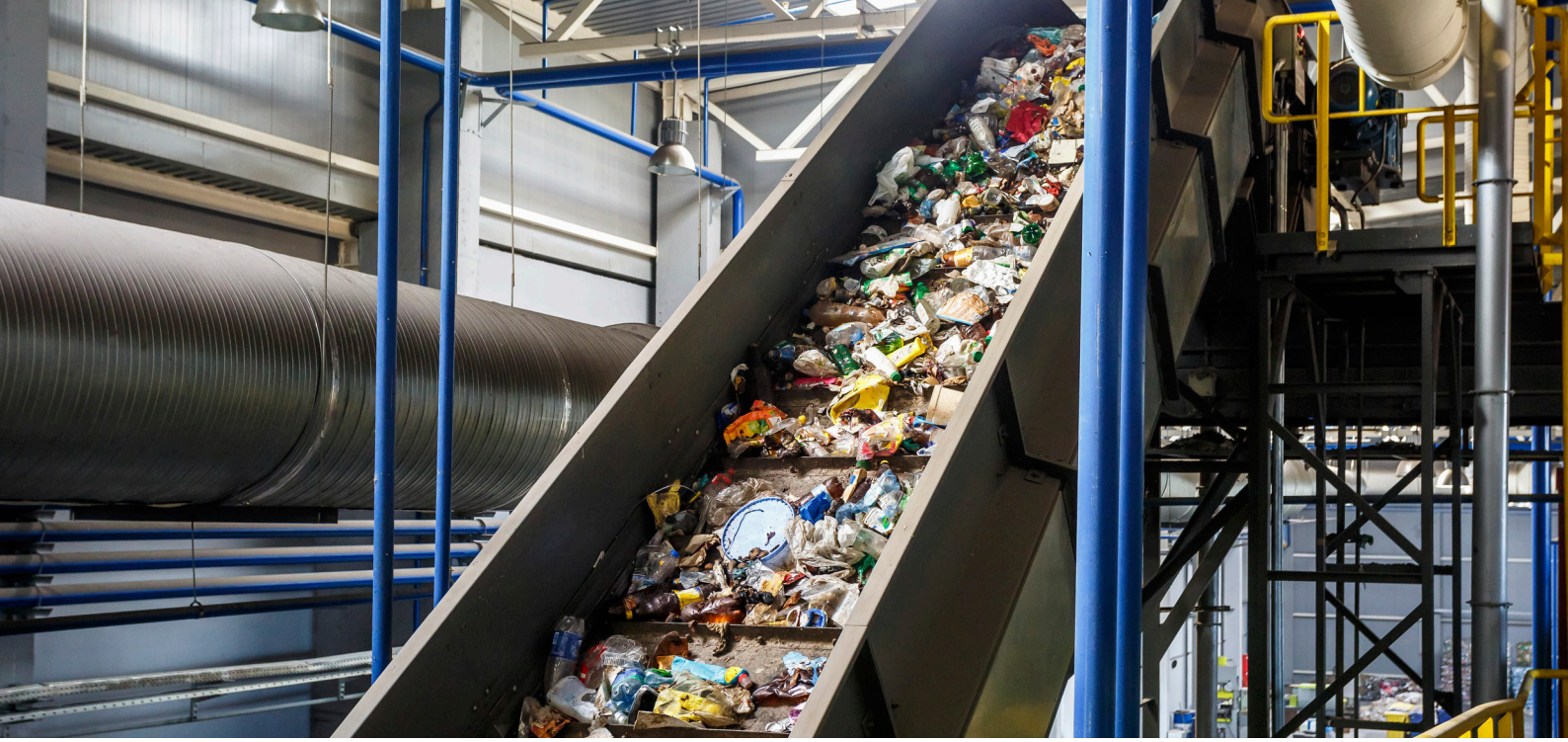
To illustrate this approach, table 5 provides examples which relate to mitigation options for sectors from the IPCC's Fifth Assessment Report.

Table 5. Examples of climate-relevant services by the key sectors identified by IPCC's Fifth Assessment Report

Key Sector	Example Mitigation Option	Example Service (CPC code listed if identified in source material CPC v2 unless stated otherwise)	Source
Energy Supply Systems	Renewable energy	Engineering services for power projects (power projects based on renewable energy) [83324 v2.1]	APEC 2021
	Carbon capture and storage	Site preparation services [543], other technical testing and analysis services [83449]	Kim, 2011
Transport	Infrastructure for modal shifts	Engineering services — transportation [83323] — General construction services of railways [54212]	Kim, 2011
	Urban transport planning	Urban planning services [83221 v2.1]	APEC 2020
Buildings	Design, urban form and standards	Architectural services and advisory services [8321]	Kim, 2011
		Environmental consulting services [83931 v2.1]	APEC 2020
	Exemplary new buildings	General construction services of residential buildings [5411] — Installation services [546]	Kim, 2011
	Retrofit existing buildings	Insulation services [54650 v1.1]	Author
Industry (and Waste)	Energy efficiency	Engineering services for industrial and manufacturing projects [83322]	Kim, 2011
	Waste reduction, re-use, recycling, energy recovery **(circular economy)**	Materials recovery (recycling) services on a fee or contract basis [894 v2.1] — Maintenance, repair and installation (except construction) services [87 v1.1]	Author
		Leasing or rental services without an operator	Tamminen 2020
		Engineering services for waste management projects (hazardous and non-hazardous) [83326]	Kim, 2011
Agriculture, Forestry and Other Land Use	Land/ livestock management	Composition and purity testing and analysis services [83441]	Kim, 2011
	Forest management	Support services to forestry and logging [86140]	Kim, 2011

128 The studies list services according to different versions of the CPC at differing levels of specificity, including CPC class and subclass levels to three, four and five digits. Some studies simply name relevant services without reference to specific CPC codes.

129 Kim (2011); Steenblik and Gelo Grosso (2011).



While desirable, simultaneous liberalisation of all relevant services is unlikely to be politically achievable, meaning negotiators will have to prioritise. Ideally, this would start with services that deliver the most climate benefit. However, as countries have different starting points, ambition levels and climate priorities, the gathering of sufficient evidence would be overly burdensome.

An approach to prioritisation might be to begin with services that are relevant to the central options for reducing fossil fuel emissions, that is, lowering demand for energy, decarbonising energy supplies, electrifying energy services and decarbonising other fuels.[130] For example, demand can be lowered by energy performance contracting for buildings,[131] by circular economy and maintenance services to extend product lifespans, and for recycling,[132] behaviour change, carbon market services and energy efficiency consulting as well as through a wide range of other services. Another example is renewable energy which is considered critical to the climate transition. Here, indispensable services from several sectors[133] are important to the design, construction, monitoring, maintenance and decommissioning[134] of renewable energy facilities.

In addition, services key to the mitigation of other greenhouse gases in the Waste and Agriculture, Forestry and Other Land Use sectors should also be considered for prioritisation.

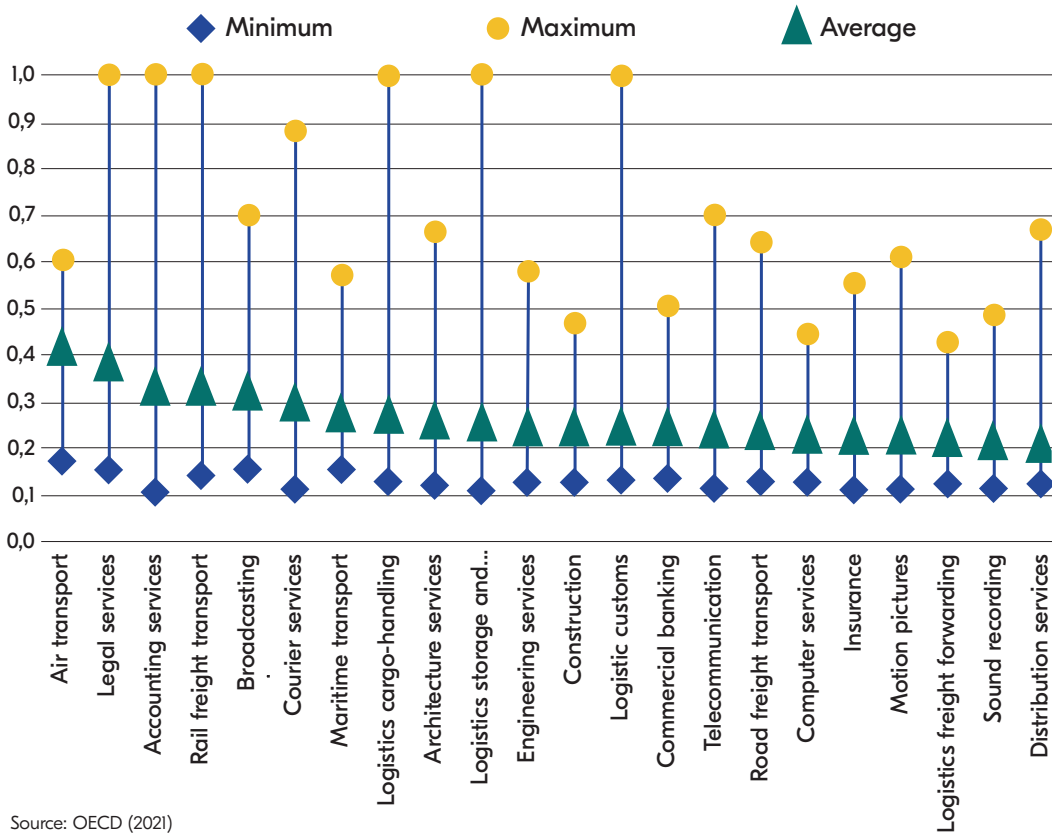
5.4 Barriers to trade in climate services

There are a range of barriers to trade in services in general, with those of relevance to climate mitigation of particular interest for future negotiations.

The OECD's Services Trade Restriction Index (STRI)[135] shows the service sectors that have the highest barriers to trade. Although CPC division 94 core environmental services are not yet covered in the STRI, it includes information on some sectors which are important for climate mitigation. The chart below shows the maximum, minimum and average STRI indices across all included sectors; a score of one represents the most restricted sectors. Of the sectors relevant to climate mitigation, legal and accounting services have the highest average restrictiveness scores while architecture, engineering, and construction are around average.

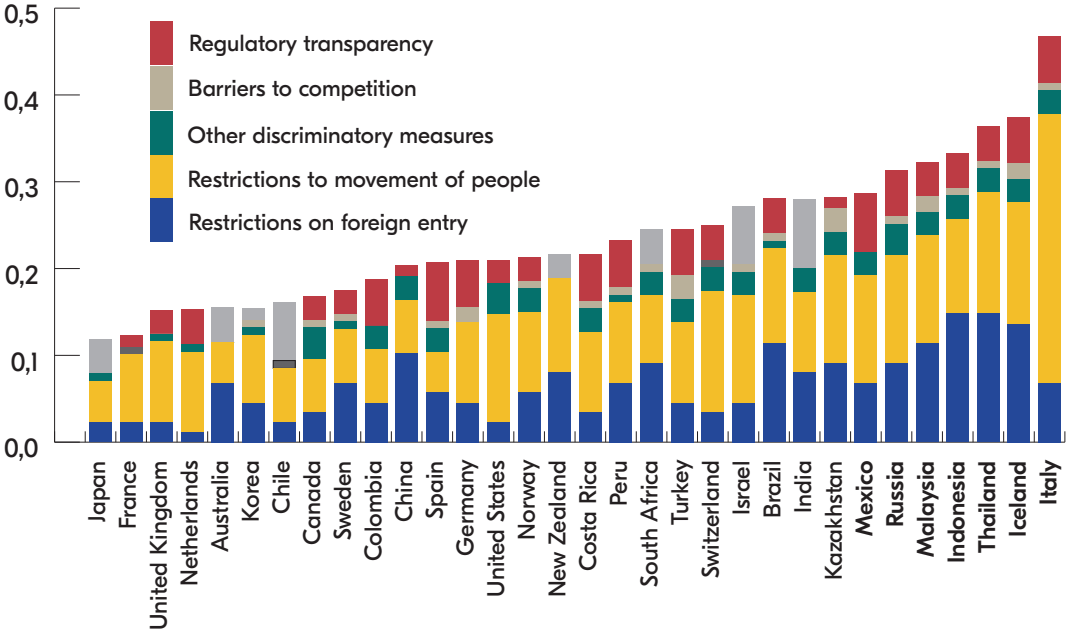
130 Rogeli et al. (2018).
131 Steenblick & Geloso Grosso (2011).
132 Rogeli et al. (2018).
133 National Board of Trade Sweden (2020a).
134 Nordås & Steenblik (2021).
135 Services Trade Restrictiveness Index (oecd.org)

Figure 3. STRI minimum, maximum and average values by sector, 2020



Source: OECD (2021)

Figure 4. Services Trade Restrictiveness Index, Engineering, 2020



Source: OECD (2021)

Looking at engineering as a service relevant to many mitigation technologies, we can see that restrictions on the movement of people (mode 4) and restrictions on foreign entry (mode 3) are the dominant barriers to services trade.[136] These modes are considered important for renewable energy projects, meaning barriers are likely to be particularly acute in relation to climate mitigation, especially in combination with the technical complexity and reliance on indispensable services that has been observed with renewables.

In addition, several studies[137] have mentioned barriers that are particularly relevant to trade in climate-relevant services (defined according to a cluster approach). Examples that can be addressed through market access commitments in GATS include investment and legal restrictions that affect company abilities to establish a commercial presence in another country (Mode 3).[138] These might be restrictions on the legal forms of companies, joint venture requirements, investment screening, foreign ownership restrictions or other measures. Another example is restrictions on the presence of natural persons (mode 4), including visa issues, quantitative limits on foreign staff and duration of stay limits. Market structure is another relevant barrier to trade in climate-relevant services if monopolies[139] or exclusive service suppliers can effectively preclude trade in climate-relevant services.

An efficient way to address these barriers is by convincing members to commit to liberalisations in the relevant sector. The specific barriers will vary depending on the type of service, but by making broad commitments in all modes of supply, this becomes less of an issue.

However, the evidence shows that there are also horizontal issues, such as data flows and domestic regulation of services, that not only affect trade in services in general but also environmental services. These issues have been discussed in other plurilateral initiatives in the WTO and environmental services should also be given attention.

Besides making broad commitments to all modes of supply in order to further address barriers to trade in climate-relevant services, negotiations could include a work programme to analyse barriers to trade in those services and determine if further action is required.

5.5 Participation of developing countries

Growth in the services sector helps spread technology and know-how, leading to innovation and reducing the vulnerability of developing countries.[140] Services trade growth is related to income[141] as is demand for environmental goods and services. The developing and least-developed countries stand to gain from participation in international services trade and via reform of their service sectors.[142]

However, possible barriers to progress in the liberalisation of climate-relevant services include the uncertainty of developing countries with regard to the impact of liberalisation and political sensitivities around Mode 4 trade.[143] Assessment of the potential economic, environmental and social impacts of policies can help policymakers make the case for and

136 This finding also holds for other key services like architecture.
137 Sauvage & Timiliotis (2017); National Board of Trade Sweden (2014, 2020a); Jacob & Møller (2017).
138 Jacob & Møller (2017).
139 Article I③ of the GATS excludes 'services supplied in the exercise of governmental authority' so this would not include state monopolies.
140 WTO (2019).
141 Five high- and middle-income Asian developing economies account for almost 60 percent of developing countries services trade, WTO (2019).
142 WTO (2019); UNESCAP (2005).
143 Kirkpartick

manage the effects of environmental services liberalisation. This is an area in which support for capacity building can help contribute to the participation of developing countries, formulate negotiating positions and help to plan accompanying measures.[144]

A barrier in relation to climate mitigation is that emission reduction technologies such as wind power or energy efficiency require specialist expertise, skills and capacity that are often not present in the country setting up the projects.[145] This observation applies to both developed and developing countries and means that effective implementation often relies on the import of services.[146] An OECD case study on consulting and engineering services trade found this mostly takes place via commercial presence (mode 3) and creates development opportunities via knowledge transfer, local partnerships and job creation, thus helping to build local capacity.[147]

The same OECD study highlighted the movement of natural persons (Mode 4) as of particular importance to the developing and least developed countries as it increases the potential for SMEs to participate in the global environmental sector. Supporting SME participation in global trade, particularly in relation to EPPs and the circular economy initiatives, can also be achieved through increased digitalisation and Mode 1 liberalisation. A WTO modelling exercise found that the adoption of digital technologies could increase developing countries share of global trade by around 15 per cent.[148] Negotiations could therefore consider actions to support the participation of developing country SMEs in services trade via support for digitalisation and a focus on relevant Mode 1 and 4 commitments.

Most emissions from low-income developing countries come from the Agriculture, Forestry and Other Land Use sector.[149] Services are particularly important to mitigation options in this sector as sustainable land management requires advice to facilitate behaviour and strategy change by farmers and land managers.[150] A focus on this sector for capacity building for developing countries could help both climate goals as well as support the participation of the lower-income WTO members.

An option could be to design the agreement similarly to the TFA in which some service liberalisation commitments would be dependent on technical assistance being provided to the developing countries.

5.6 Conclusions and recommendations

Further market access openings for climate-relevant services are of vital importance, as has been proposed by the European Union in its non-paper, the WTO members in the Special Session of the Council for Trade in Services and by the group negotiating the Agreement on Climate Change, Trade and Sustainability.

Services are critical to promoting the dissemination of technologies and knowledge for the climate transition both in their own right and as complements to climate goods. Linking services liberalisation to the evidence on climate change mitigation provides a strong rationale for negotiation. The identification of relevant services should be considered

144 Kirkpartick et al. (2006).
145 Steenblik and Gelo Grosso (2011).
146 Steenblik and Gelo Grosso (2011).
147 Sauvage & Timiliotis (2017).
148 WTO (2019).
149 IPCC (2014).
150 FAO (2017).

from an objective, climate-based perspective based on an updated review of services relevant to mitigation.

The IPCC Working Group III mitigation reports are neutral, evidence based and identify mitigation options with potential to be applied in all countries. Our review of the most recent report suggests that services can directly influence and positively contribute to mitigation in all of the highest emitting sectors. As with climate goods, we recommend **four supplementary categories: climate infrastructure, behaviour change, circular economy and agriculture, land and forest management**. Services are particularly important in each of these categories.

There are a large number of climate-relevant services that can be targeted for liberalisation, and we recommend that negotiators aim **to include as many climate-relevant services as possible**. A climate cluster approach can be used to liberalise non-core environmental services such as engineering or architecture by specifying these services on the basis of their contributions to a mitigation project or end use, thus avoiding concerns over services with dual uses. Our assessment is that **a cluster approach** should be pursued in order to identify climate-relevant services for liberalisation.

Another point of similarity to climate goods is the rapid technological development that affects services. However, as it is difficult to predict future technological development, we propose that **revision clauses** be included in a plurilateral agreement for services.

For developing countries, services liberalisation has the potential to contribute to economic development and climate mitigation efforts. To support this, capacity building could focus on impact assessments, agriculture advice services, technology transfer and the participation of developing countries' SMEs in services trade via digitalisation. We find the **TFA approach highly relevant** as some service liberalisation commitments would depend on technical assistance for developing countries.

6 Disciplines for fossil fuel subsidies

Fossil fuel subsidies have detrimental effects on global economic welfare due to the creation of environmental damages, trade distortions and inefficient fiscal policies. Despite the attention given to the issue and the ambitions set by the G20, APEC[151] and, most importantly, through Agenda 2030, not enough action has been taken on fossil fuel subsidies[152] nor have any new international disciplines been created that are beyond those in the WTO (mainly the Agreement on Subsidies and Countervailing Measures [the SCM Agreement])[153] which have thus far had a limited effect on fossil fuel subsidies.[154]

This chapter focuses on how an agreement could contribute to the phasing out of fossil fuel subsidies. We will look at some of the key issues that need to be negotiated and agreed upon to conclude such an agreement, namely: what a fossil fuel subsidy is; which fossil fuel subsidies should be disciplined; and how to design an agreement to achieve binding and enforceable disciplines for these subsidies.

6.1 What is a fossil fuel subsidy?

One of the most important negotiating issues for a fossil fuel subsidy agreement is to agree upon what constitutes a fossil fuel subsidy.[155] While a general description of fossil fuel subsidies as *government policies that support producers or consumers of fossil fuels* is widely accepted, there is no internationally agreed upon definition that could readily be used in an agreement.[156]

However, in the trade arena and in the WTO in particular, definitions and delineations of subsidies exist that can be used as an inspiration and thus facilitate an agreement. To ensure that such an agreement covers the subsidies of concern and effectively reaches the set objectives, an understanding of how and to whom subsidies are provided as well as the harmfulness of the subsidies is required. Consequently, detailed classifications and distinctions could help to identify fossil fuel subsidies as well as to understand and address the trade and environmental impacts of fossil fuel subsidies.

151 In 2009, G20 and APEC members made commitments to rationalize and phase out over the medium-term inefficient fossil fuel subsidies that encourage wasteful consumption.

152 While there has been limited but nonetheless progress in reducing fossil fuel subsidies over the last 10—15 years, OECD data (2019) shows that the trend was broken in 2019 when the amount of support increased by five percent compared to 2018. This increase was mainly driven by a rise in support of 30 percent for the production of fossil fuels. Furthermore, between 2010 and 2019, the total amount of fossil fuel subsidies was only reduced by 22 percent (from $498 billion to $388 billion).

153 Fossil fuel subsidies, like other subsidies, are, in principle, covered by the SCM Agreement and could also be governed by the relevant provisions of the GATT 1994, the Agreement on Trade-Related Investment Measures, the Agreement on Agriculture and GATS.

154 For example, Verkuij et al. (2019) pointed out that although the SCM Agreement in principle disciplines some fossil fuel subsidies, no fossil fuel subsidies have thus far been challenged, mainly due to difficulties in meeting the legal requirements connected to specificity and to showing adverse effects.

155 This would also require a definition of fossil fuels. However, this should not be too big a hurdle as there is a general agreement about a definition. See, e.g., the SDG 12.c. indicator methodology paper (UNEP et al. 2019) for further elaborations.

156 Different international organisations, such as the OECD and IMF have, however, developed a definition of fossil fuel subsidies in order to collect data and compile estimates of fossil fuel subsidies.

6.1.1 Classifying fossil fuel subsidies

It is useful to analyse and classify fossil fuel subsidies based on the recipients, how the subsidy is provided, the part of the value chain in which the subsidy is provided and the subsidy's harmfulness.[157]

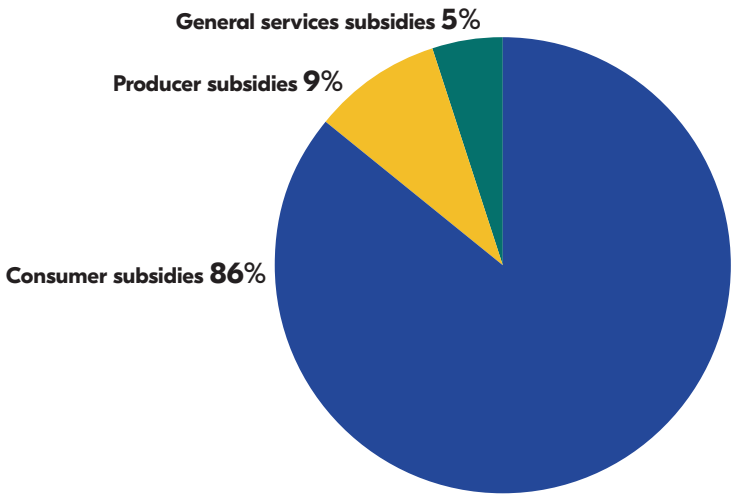
Classifying by recipient

Producer subsidies are subsidies directed to producers of fossil fuels along some or all of the stages in the oil, gas and coal value chain. Such subsidies lower the costs of exploration, production and distribution, thereby creating artificially low costs. This makes domestic firms more competitive and makes new exploration and development more profitable. Collectively, they can also lead to lower prices for fossil fuels and thus to excess emissions. They also distort trade between different types of fossil fuels, between fossil fuels and renewable alternatives and between goods that use fossil fuels as an input. The value of producer subsidies was estimated to be 34 bn USD in 2019 which represents approximately 9 percent of total fossil fuel subsidies.[158]

Consumer subsidies also lower the price of fossil fuels to artificially low levels, encouraging consumption and excess emissions. These subsidies are predominantly used in developing countries and can be directed towards private customers and firms.[159] Consumer subsidies distort trade by incentivising the consumption of fossil fuels and associated technologies at the expense of cleaner energy sources and technologies. The value of consumer subsidies is substantially higher than that of producer subsidies and was estimated to be 335 bn USD in 2019, which represents approximately 86 percent of the total.[160]

General services subsidies are indirect subsidies that create enabling conditions for the fossil fuel sector. These include, for example, R&D for fossil fuel exploration, industry-specific infrastructure development, debt restructuring and the funding of remediation. This category received 18 bn USD in 2019, which represents approximately 5 percent of the total.[161]

Figure 5. Fossil fuel subsidies by recipient, 2019



Source: Based on data from fossilfuelsubsidytracker.org

157 The classification of the recipients and the benefits received is the method used by the OECD to estimate the value of fossil fuel subsidies.
158 Home - Fossil Fuel Subsidies (fossilfuelsubsidytracker.org).
159 Van Asselt & Moerenhout (2020).
160 Home - Fossil Fuel Subsidies (fossilfuelsubsidytracker.org).
161 Ibid.

Classifying by form of benefit received

Governments can directly provide support through direct payments, grants, subsidised loans, loan guarantees or tax breaks. Governments can also indirectly provide support using price regulations or by foregoing revenue from state owned assets. Some academics and organisations have also argued that uninternalised externalities (e.g., a lack of carbon pricing) should also be treated as subsidies.[162] The inclusion of uninternalised externalities would, however, be problematic, not only for theoretical reasons but also for practical reasons. Thus, most intergovernmental organisations exclude them when defining and estimating the size of fossil fuel subsidies.[163]

Classifying by harm

Although there are several approaches to differentiating between types of fossil fuel subsidies, there is limited empirical evidence on the environmental effects of the different types of fossil fuel subsidies.[164] The available studies that model emission reductions related to the removal of fossil fuel subsidies have shown different results depending on subsidy coverage, time frames and methodology. The most comprehensive study, which estimated the effect of the removal of both consumer and producer subsidies, showed that in 2010, emissions would have been 36 per cent lower than the actual emissions that year.[165] Studies which have focussed on the removal of consumer fossil fuel subsidies show emission reductions in the range of approximately 6–13 per cent of global emissions by 2050.[166] Furthermore, a study which estimated the impact of the removal of all producer subsidies on a global scale found that this would result in an emission reduction of 37 Gt, corresponding to 4 percent of the reductions needed to achieve the 1.5 degree target in the Paris Agreement.[167]

With respect to trade effects, no empirical studies on fossil fuel subsidies appear to be available. However, theoretical work has found that all fossil fuel subsidies lead to direct or indirect trade impacts.[168]

Given the limited evidence base on the effects of different subsidy types, it is difficult to rank these based on emissions that were caused and trade distortions. Nevertheless, there are studies that have proposed rankings and categorisations of different subsidy types based on harm, but these studies have not been based on empirical evidence.[169]

6.2 Which fossil fuel subsidies should be disciplined?

It is clear that, in general, fossil fuel subsidies harm the environment and distort trade regardless of the recipients and the type of subsidy. An agreement should therefore aim to discipline as broad a scope of fossil fuel subsidies as possible. Nevertheless, since international commitments on fossil fuel subsidy reform refer to the term inefficient fossil fuel subsidies, one of the key questions to address is if there are fossil fuel subsidies that could be considered not to be inefficient and thus be exempted from a phase-out obligation.

162 For example, Fischer & Toman (2000) call such subsidies passive subsidies.
163 The IMF is the only IGO that includes uninternalised externalities in their estimates of fossil fuel subsidies.
164 That is, it does not say whether or not removing one US$ of a subsidy to a specific recipient generates more emission reductions than does another.
165 Stefanski (2016).
166 Merill et al. (2015).
167 Gerasimchuk et al. (2017).
168 Moerenhout & Irschlinger (2020).
169 Pereira (2017) suggested that prohibited subsidies could include subsidies that cause the most harm to the environment, e.g., based on the share of global CO2 emissions by fossil fuel type, including subsidies to new coal fired power plants, subsidies that contribute to enhance existing inefficient fossil fuel production and subsidies to new exploration or extraction of fossil fuel industries.

6.2.1 Are there efficient fossil fuel subsidies?

Economic theory can be used to assess if there are any circumstances in which a subsidy could be considered efficient. According to economic welfare theory, the only case in which a governmental intervention such as a fossil fuel subsidy can be motivated by efficiency reasons is if the intervention corrects a market failure and brings private and social costs and benefits into alignment.[170]

Based on this, can any fossil fuel subsidy be considered efficient? As fossil fuel combustion generates negative externalities, efficiency is only theoretically possible if those creating the externalities bear a cost (i.e., costs are internalised) either by direct or indirect carbon pricing. As subsidisation of fossil fuels benefits producers or users instead of making them bear the cost of their use, fossil fuel subsidies cannot be considered efficient. Furthermore, countries often introduce fossil fuel subsidies to achieve societal goals, such as ensuring the affordability of electricity or transport. However, in these circumstances, fossil fuel subsidies can still not be considered efficient in reaching those goals, as other support measures can achieve the same purpose but at lower societal costs.[171]

An exception for carbon pricing tax breaks?

The reasoning related to inefficient fossil fuel subsidies holds for most types of subsidies, including direct payments, price controls and transfer of risk. However, subsidies in the form of tax breaks[172] to avoid leakage related to carbon pricing might be an exception. This might seem counterintuitive as tax breaks related to carbon pricing result in increases in home country use of fossil fuels compared to a situation in which they are fully taxed.[173] However, in an international trade context and in the absence of a global carbon price, national carbon pricing leads to the risk of loss of competitiveness and *thus carbon leakage*. A tax break for exporting industries can thus work as a second best solution and reduce this risk. Such a policy could then reduce global emissions compared to a counterfactual situation with no tax breaks (see text box for an example).

Example

Example showing treatment of carbon pricing tax breaks

Country A has a carbon price of 100 € per tonne emitted but estimates that the relevant price level to avoid leakage is 20 € per tonne for an energy intensive and trade exposed sector. This gives a tax break of 80 € per tonne which is considered a fossil fuel subsidy under the accepted definition. Country B has no carbon pricing or subsidies and therefore no fossil fuel subsidies.

Aside from the obvious lack of fairness, perverse incentives are created for carbon pricing. For example, should Country A increase its carbon price to 120 € per tonne but hold the price for the trade exposed sector this would register as an increase in fossil fuel subsidies of 20 € per tonne, creating a disincentive to raise prices.

Moreover, if the two countries were party to an agreement that disciplines fossil fuel subsidies, Country B could raise a complaint against Country A for introducing a more stringent climate policy and thus the amount of fossil fuel subsidy, even though the actual cost levels are higher in Country A. As the purpose of carbon pricing is not to collect revenue but to internalise externalities and steer the economy away from fossil fuels, the absolute level of carbon pricing is more relevant than the relative level.

170 Johansson (1991).
171 See, e.g., Plante (2014); Fay et al. (2015); and Dennis (2016).
172 This could also include, e.g., free allowances in emission trading systems.
173 This primarily holds for consumer subsidies since it is not always the case that producer subsidies reduce prices and thus increase use.

This reasoning suggests that tax breaks related to carbon pricing should be exempted from disciplines when their inclusion could lead to leakage. Furthermore, if tax breaks for carbon pricing were to be included in a fossil fuel subsidy agreement, the agreement would, at least for some countries, resemble an agreement on carbon pricing rather than on subsidies. Countries that have introduced carbon pricing but have differentiated levels to avoid leakage would either have to increase the price in the sectors with lower levels to remove the subsidies, thereby forcing them to create a uniform carbon price, or alternatively, lower the price in the sectors with higher prices. However, special treatment for such tax breaks would need to be carefully designed, with relevant criteria to only target leakage and to avoid misuse or watering down of carbon pricing. Other technical aspects would also need to be weighed, such as the interplay of tax breaks with other instruments to avoid leakage and potential carbon border adjustment mechanisms.

To sum up, fossil fuel subsidies in general are inefficient, but tax breaks related to carbon pricing could be argued to be less inefficient than fossil fuel subsidies in general and thus justify special treatment or exclusion in an upcoming agreement.

6.3 Options for creating an efficient fossil fuel subsidy agreement

In this section, we will discuss how to create a binding and enforceable agreement that disciplines inefficient fossil fuel subsidies. The focus will be on the objective, definitions, disciplines, SDT and enforcement. As there are a range of alternatives available, we will not comprehensively address all alternatives or challenges that need to be addressed prior to and during negotiations but rather highlight some alternatives and discuss some of the main issues that need to be resolved. The section draws on previous work by the IISD[174] and the National Board of Trade,[175] among others.

6.3.1 The objective of the agreement

One of the prerequisites for a successful agreement could be to determine a specific objective for the negotiations and the agreement. This could create a common understanding of what the agreement aims to achieve and thus facilitate negotiations by clarifying the scope. Furthermore, it could help avoid situations in which countries aim to include peripheral issues or special interests.[176] As the main purpose of phasing out fossil fuel subsidies is environmental, the objective of the fossil fuel subsidy agreement should be primarily environmental, that is, to reduce emissions caused by fossil fuel subsidies. However, as an agreement also will contribute to reducing the trade-distorting effects of fossil fuel subsidies beyond what is already achieved by the SCM Agreement, a trade objective should also be included. To enable the participation of developing countries and avoid negative social effects, the objective should also include a development perspective.

The stated objectives could benefit from being based on the commitments already made by countries in international agreements or statements, for example, within G20 and Agenda 2030. Although the commitments made within these different fora are similar, the

174 IISD (forthcoming).
175 National Board of Trade (2020a), Swedish Board of Agriculture and National Board of Trade (2018).
176 As an example, the USA proposed during the ongoing fishery subsidies negotiations to add disciplines to subsidies that support fishing-related activities in order to target forced labor. Microsoft Word - US.Proposal. Forced.Labor.26May2021.final (ustr.gov)

Sustainable Development Goal (SDG) 12.c[177] might be a good starting point as it has been agreed upon by all UN countries.

The objectives could be handled in different ways. However, as we suggest for goods and services (see chapter 8), the objectives should be inserted in the mandate for the negotiations to facilitate negotiations and clarify the scope of the negotiations. We also recommend that the aim of the agreement be included in the preamble of the agreement to serve as an interpretative guideline for the agreement.[178]

6.3.2 Definition of fossil fuel subsidies and scope of the agreement

Given the lack of a general definition of fossil fuel subsidies, an agreement for the purpose of phasing out such subsidies needs to make clear what types of subsidies would be covered. It should, however, be noted that the choice of fossil fuel subsidy definition does not imply that all fossil fuel subsidies covered by the scope must be disciplined in the same way or disciplined at all. The scope and decision on disciplines are, however, closely connected and should be considered in tandem.

A new definition

One option is for negotiators to create a completely new definition of the types of subsidies that will be covered by the agreement or, alternatively, to list the specific subsidies that they want to cover. Either option could be based on, for example, different types of fossil fuel subsidies and/or fossil fuel subsidies to specific recipients. This would provide negotiators some space and enable them to include all or only a selected set of subsidies, potentially the most harmful, and exclude subsidies for which an agreement cannot be reached. However, such an approach could also make it hard to conclude negotiations as all parties to the negotiations are given the opportunity to intervene based on their specific economic interests, which could result in a less ambitious outcome.

How the existing agreements handle definitions and scope

Another alternative is to start from the current agreements within the WTO that discipline subsidies, primarily the SCM Agreement and the Agreement on Agriculture (AoA). The use of either of them as a template could create continuity and reduce the complexity that comes with negotiating a completely new agreement. These agreements contain well-established definitions and delineations that could be expanded with the necessary elements that are required to focus only on fossil fuel subsidies.[179] The approach taken in the SCM Agreement is also the approach chosen for the ongoing fisheries subsidies negotiations.

The approach taken in the SCM Agreement

The SCM Agreement defines a measure as a *subsidy* if there is a financial contribution by a government or a public body that for example (1) involves a direct or potentially direct transfer of funds or liabilities; (2) generates/creates tax rebates; (3) is a provision of goods

177 Target 12.c: *Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities.*

178 Pursuant to Article 31 of the Vienna Convention on the Law of Treaties, 1155 UNTS 331, adopted on 23 May 1969, entered into force 27 January 1980, 'A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in its context and in light of its object and purpose'.

179 For example, specify that it only applies to the exploration, production or consumption of fossil fuels.

or services other than general infrastructure; or (4) is any form of income or price support. In addition to this, the measure needs to confer a benefit. [180]

The provisions in the SCM Agreement are only applicable if the subsidy is deemed to be *specific*.[181] A subsidy is specific if it is limited to certain enterprises, a certain geographic region or if it is an export subsidy or is contingent upon the use of domestic over imported goods.[182] The specificity requirement was added to the SCM Agreement because specific subsidies were deemed more distortive than general subsidies; in addition, the requirement ensures that normal governmental functions, such as education and infrastructure, are not covered.[183]

In addition to being well-established, the use of the definition set out in the SCM Agreement as a basis for an agreement could be a promising option as few changes would be needed to cover all inefficient fossil fuel subsidies. Since the definition covers tax breaks, negotiators could choose to modify the definition to exclude specific carbon pricing tax breaks. Another alternative is to keep the current definition and exclude from disciplines those carbon pricing tax breaks that aim to reduce leakage.

Furthermore, to maintain the specificity requirement in the SCM Agreement in an agreement covering fossil fuel subsidies could be problematic, as it would exclude a substantial share of fossil fuel subsidies that are in place today.[184] In particular, a large share of fossil fuel subsidies are aimed at consumers. This makes them particularly susceptible to be 'unspecific' for the purpose of the SCM Agreement and allows them to fall outside the scope of the SCM Agreement.[185] Furthermore, as fossil fuel subsidies have negative environmental and trade effects regardless of their specificity, a more sensible approach would be to remove the requirement of specificity from a fossil fuel subsidy agreement. However, the effect that the inclusion or exclusion of the specificity requirement may have on the actual fossil fuel subsidy phaseout depends on how the disciplines are designed; that is, if all fossil fuel subsidies would be prohibited, they could be determined to be specific just like local content requirements and export subsidies.

The Agreement on Agriculture approach

The approach taken for domestic support in the AoA could be another potential model to determine the scope. The AoA in principle covers all support measures for agricultural producers. It does not define prohibited or actionable subsidies but rather classifies subsidies into different boxes depending on the role they play in competitiveness and their impact on trade. The AoA divides the domestic support measures into support measures that have no or minimal distortive effect on trade and are thus allowed to be provided (*green box*) and support measures that have a distortive effect on trade and are thus only allowed to be provided to a certain extent (*amber box*).[186] No support measures are prohibited in the AoA. However, as there are no exemptions for the prohibited subsidies in the SCM Agreement, the Appellate Body has concluded that prohibited measures are also prohibited for agricultural goods.[187] The AoA approach could be adjusted and used as a

180 Article 1(1) of the SCM Agreement.
181 Pursuant to Article 2 of the SCM Agreement.
182 Article 2 of the SCM Agreement.
183 Horlick & Clarke (2016).
184 Trachtman (2017).
185 Verkuijl et al. (2019) p. 335 and 366.
186 There is also a blue box covering support programmes that requires the agricultural producers to limit their production. There are no ceilings for this type of support.
187 However, although there is not formally a red box in the AoA, trade distorting support measures exceeding a member's ceiling for amber box support are prohibited. This implies that it is not a particular type of domestic support measure that is prohibited. Furthermore, as a result of the Nairobi decision on export competition, export subsidies for agricultural products are now prohibited for all developed countries and the exceptions that apply for some categories of export subsidies for developing countries are being phased out.

template to determine the scope of fossil fuel subsidies covered by the agreement, with different levels of disciplines or reduction commitments for different types of subsidies. However, such an approach would necessarily also require that parties agree on the types of subsidies that should be covered by the agreement, as well as agreeing on which should be placed in which box, which could prove difficult. Even though the AoA and the SCM Agreement approaches are based on different logics, both approaches can be used to cover the scope of subsidies agreed.

6.3.3 How to discipline the subsidies

While the definitions and scope are important for the effectiveness of a fossil fuel subsidy agreement, the crucial issue is the decision on which subsidies should be covered by disciplines, and how they are disciplined. Once again a variety of options exist, but the SCM Agreement and the AoA could be used as a starting point.

The approach taken in the SCM Agreement

The SCM Agreement divides subsidies into two categories,[188] namely prohibited subsidies and actionable subsidies, which have their own substantive and procedural rules and remedies that are different from the WTO's general dispute settlement rules. *Prohibited* subsidies are ones that are contingent on export performance and subsidies contingent on the use of domestic over imported goods.[189] If a subsidy is found to be prohibited, it must be withdrawn. However, a negatively affected WTO member also has the possibility to impose countervailing duties on the subsidised import or to impose countervailing measures on any product after an authorisation by the Dispute Settlement Body. This possibility also exists for actionable subsidies. The *actionable* ones are subsidies that cause adverse economic effects on the interests of another member.[190] These subsidies are not prohibited but are challengeable, and they must be withdrawn, or at least their adverse effects must be removed, when they cause harm to other WTO members.[191]

The AoA approach

The AoA has a different approach which focusses on countries' support measures which should not exceed certain aggregate monetary levels. These maximum levels differ among countries. For some members, they are based on previous support levels and, consequently, these members are allowed higher support levels than others. Most members are only allowed to use trade distorting support below the so-called de *minimis* levels.[192] Furthermore, WTO members that provide amber box support have, with certain exceptions, implemented specified reduction commitments.

Applying the approaches to fossil fuel subsidies

Based on these two approaches, there are a range of alternatives for how the fossil fuel subsidy disciplines could be designed. The most ambitious would be for negotiators to follow the approach taken in the SCM Agreement but to choose to prohibit all inefficient

188 Previously, the SCM Agreement also covered non-actionable subsidies (or so-called 'green light subsidies'), which were introduced on a trial basis. These included subsidies for R&D and regional development, and subsidies for complying with new environmental regulations.

189 Article 3 of the SCM Agreement.

190 Injury to the domestic industry of another member, the nullification or impairment of benefits to other members and serious prejudice to the interests of another member. See Article 5 of the SCM Agreement for full description.

191 Article 7.8 of the SCM Agreement.

192 All members are allowed to use trade distorting support with amounts below a de minimus level, which is 10 percent of the value of production for developing countries and 5 percent for developed countries.

fossil fuel subsidies and develop a set of rules regarding remedies which should be specifically designed to handle fossil fuel subsidies. The same effect could be achieved if a red box which prohibits inefficient fossil fuel subsidies was added to an agreement similar to the AoA. This would also require fossil fuel subsidy-specific rules for remedies. This far-reaching alternative would, given that the chosen scope is broad, have the largest effect on emissions and on trade. It might, however, be politically challenging to reach an agreement that has no possibility of differentiating or exempting any types of subsidies.[193] As previously argued, less inefficient subsidies should not be prohibited and could instead be exempted from disciplines, made actionable as under the SCM Agreement or under standstill or reductions commitments.

Furthermore, if countries cannot agree on the prohibition of all inefficient fossil fuel subsidies, a less ambitious but possible option is to use the approach taken in the SCM Agreement and prohibit some fossil fuel subsidies and make others actionable. This would enable negotiators to prohibit the subsidies that are considered most environmentally harmful and that are also potentially trade distorting and make the subsidies that are considered less harmful actionable. However, such differentiation and ranking should be supported by empirical studies or on a well-founded economic theoretical basis to ensure it is in line with the agreement's objectives.

A third option is to use the AoA approach and place the fossil fuel subsidies in boxes under standstill or reduction commitments. This option could also include the possibility of complementing the original AoA approach with a red box. This option would then resemble the approach in the SCM Agreement but with some subsidies under reduction or standstill commitments rather than being actionable.

Finally, negotiators could create a hybrid of the approaches and prohibit some fossil fuel subsidies, make some actionable, place some under standstill or reduction commitments and exempt some. In addition to the definition, the subsidies that are subject to disciplines could be explicitly listed to simplify and clarify which subsidies are subject to the different types of disciplines. In such a case, it is important to also address potential future forms of subsidies to prevent circumvention of the disciplines.

193 Countries might want to exempt certain less environmentally harmful subsidies or subsidies that are environmentally harmful but justified for other reasons.

Potential adjustments to the approach in the SCM Agreement

If negotiators were to choose the approach in the SCM Agreement and make some subsidies actionable, considerable changes in the SCM Agreement would probably be needed to make the remedies in such an agreement effective against fossil fuel subsidies. First, as the SCM Agreement focus on subsidies that have adverse economic and trade effects, a fossil fuel subsidy agreement would need to expand the scope of effects covered to also include environmental harm. The environmental harm could, for example, be that the subsidy is contributing to more emissions than would have been the case if the subsidy was not provided.[194] This could, however, be potentially hard for a complainant to prove. Negotiators could thus include a presumption that fossil fuel subsidies generate excess emissions and distort trade and lay the burden of proof to show the opposite on the party that provides the subsidy. Further analysis would be required to determine how this should be handled in practice to achieve the objectives.

Second, to impose countervailing duties pursuant to the SCM Agreement, a complainant is required to show that a subsidy causes an adverse economic effect for a domestic like product as well as a causal link between the subsidised product and the adverse effect. To achieve the environmental purpose of the agreement, the like product aspect would need to be given consideration, as it might be hard in some cases to show an adverse effect or injury on like products from fossil fuel subsidies. This is the case, for example, with coal and oil for which the relevant competing goods might not always be like products but instead products in the renewable and clean energy sectors. To handle this, the like product requirement would need to be replaced by another criterion. This new criterion could refer to goods competing with the subsidised product or goods that fulfil the same purpose as the subsidised product.

Nevertheless, even with an environmental criterion, demonstrating that there are adverse effects on competing greener technologies could be difficult in practice because they operate in different markets with different technologies and infrastructures.[195] Negotiators would need to carefully consider the chosen method necessary to show adverse effects on unlike products to make this approach work.

To sum up, there are several promising options to discipline fossil fuel subsidies. Our assessment is that the same level of disciplines can be reached irrespective of structure, as it is the substantive provisions that determine the outcome rather than the approach chosen. However, the most ambitious outcome would be generated by using the approach in the SCM Agreement and prohibiting as many inefficient fossil fuel subsidies as politically possible, preferably all. The same effect could be reached by using the AoA approach and placing the subsidies in a red box.

An approach that allows some fossil fuel subsidies to be actionable, some to be under reduction or standstill commitments and even some to be made non-actionable[196] could create more political flexibility and provide more space for negotiators to adjust the disciplines according to the parties' ambitions. The same holds for a hybrid approach. Nevertheless, there might be advantages in choosing an approach that resembles the agreements already in place instead of creating a new approach, as current approaches are well established and countries are familiar with the legal procedures.

194 This would, e.g., exclude tax breaks that limit leakage.

195 Price competition with fossil fuels is just one element of demand for cleaner technologies; other important factors include, e.g., government energy policy and structural factors like the availability of grid connectivity for renewables or the recharging/refuelling facilities important for electric and hydrogen vehicles.

196 In the AoA approach, this could be achieved by placing some subsidies in a green box.

6.3.4 Transparency provisions

As the existent notification requirements in the SCM Agreement[197] have not been followed to the extent envisioned, the fossil fuel subsidy agreement would benefit from the inclusion of notification requirements with strong incentives. We therefore recommend that the agreement include transparency provisions and notification requirements for all fossil fuel subsidies that fit the agreed definition. The incentives could be political through name-and-shame mechanisms or through the use of economic sanctions. Another alternative, or a complement, is to allow international organisations to review countries' fossil fuel subsidies (and to make shadow notifications).

6.3.5 How to enforce the agreement

The approach chosen to ensure enforcement and conduct dispute settlement could be decisive for the effectiveness of the agreement. This could also influence the propensity of countries to join the agreement, to include a broad scope and to agree on effective disciplines. A softer enforcement mechanism[198] can increase countries' willingness to engage in a broad agreement with effective disciplines, while a sharper enforcement mechanism may make countries more hesitant. International agreements with sharper enforcement mechanisms can also create larger economic incentives for countries to comply with the obligations.

However, if the agreement or the disciplines were to be based on the SCM Agreement or AoA approach, it would be natural to include or apply enforcement and dispute settlement mechanisms similar to the original agreements.[199] Nevertheless, the fossil fuel subsidy agreement or disciplines would be of a different nature than the SCM Agreement and AoA as the aim is not only to handle economic and trade effects but also climate effects; thus, changes to the original mechanisms should be considered. Most importantly, as the main purpose of the agreement is to reduce emissions from fossil fuel subsidies, remedies might primarily aim to enforce compliance rather than rebalance trade which, for example, could suggest that financial penalties be considered. As regards the approach in the SCM Agreement, this could, for example, include other types of remedies, different burden of proofs or standards of proofs, other procedures, and different methods and thresholds for calculating damage/harm.[200] Exactly which type of model should be used needs more analysis.

6.4 Participation of developing countries

A small number of primarily developed countries are responsible for the largest share of emissions to date. Nevertheless, it would be important to include and facilitate the participation of developing countries as many developing countries provide large amounts of fossil fuel subsidies and are responsible for a large share of emissions today.

This could be done by including different categories of SDT provisions in the form of, for example, traditional SDT, such as exemptions or longer implementation periods to reach the determined reduction. Another option could be a gradual implementation of commitments that are possibly contingent on technical assistance in an approach similar to that

197 In accordance with Article 25.1 of the SCM Agreement.

198 Such as, e.g., consultations and recommendations from an expert panel.

199 Pursuant to Article 19 of the AoA disputes under the AoA should be handed by the DSU. Since the peace clause in the AoA expired, it may also be possible to apply remedies in the SCM Agreement to subsidies covered by the AoA.

200 Altering the burden of proof could also make enforcement easier and, consequently, also strengthen compliance.

adopted in the TFA. The technical assistance could include assistance with the collection of data, the measurement and mapping of subsidies and the design of other support programmes that are not fossil fuel subsidies. The technical assistance could also include support for renewable energy development.

6.5 Conclusions and recommendations

To conclude, all inefficient subsidies for fossil fuels have detrimental effects on the environment and distort trade. An agreement with the objective of phasing out inefficient fossil fuel subsidies should include binding and **enforceable disciplines that prohibit all or as many inefficient fossil fuel subsidies as is politically possible.**

Fossil fuel subsidies that can be argued to be less inefficient, that is, tax breaks related to carbon pricing, could be made actionable, non-actionable or subject to reduction commitments. If countries cannot agree on the prohibition of all inefficient fossil fuel subsidies and instead aim for a less ambitious agreement, it is possible to make inefficient fossil fuel subsidies subject to actionability or reduction commitments.

While there are several options for definitions, **negotiations could benefit from the use of subsidy definitions which are already in use within the WTO**, such as the definitions in the SCM Agreement or the approach taken in the AoA. Both approaches can achieve the same subsidy coverage.

Additionally, the **agreement should include stronger notification requirements than currently exist for all fossil fuel subsidies that fit the description**, regardless of whether they are subject to disciplines or not.

Negotiations would be facilitated by a common understanding of the objective of the agreement, which should be based on agreed international commitments, preferably the SDG 12.c.

To encourage the participation of developing countries, the **agreement should include SDT provisions**. A gradual implementation of commitments that are possibly contingent on technical assistance in an approach similar to that adopted in the TFA could be an option.

The primary objective of the chosen enforcement mechanism should be to **ensure compliance.** The enforcement mechanism should also be able to handle effects on both emissions and trade. However, exactly which type of model should be used requires more analysis.

7 The legal framework

Negotiations in the WTO can take different forms, either multilateral or plurilateral, and the outcomes can be implemented in various ways in order to in effect achieve multilateral or plurilateral outcomes. In this section, we will briefly look into some of the options within the legal framework of the WTO and what could and would be the most suitable for an agreement on climate-relevant goods and services, TBTs and fossil fuel subsidies.[201] We will first review the main options within the WTO[202] and then briefly look at some other options which could be used on their own or as complements to other alternatives. We will also consider the implementation mechanism used in the TFA for developing countries which could affect their participation and the possible future multilateralisation of any negotiated outcome.

7.1 Multilateral agreements — a first-hand choice but difficult to achieve

The first-hand choice for negotiations on a new agreement would be a multilateral agreement. The WTO was negotiated in a multilateral trade negotiation that included all the WTO members and was conducted through a single undertaking approach, meaning that nothing was agreed until everything was agreed. The conclusion of the Uruguay Round and the multilateral agreements in Annex 1 are binding on all members and create rights for all members. From an economic and political perspective, they are also the first-hand choice since they include all members without discrimination and can lead to the best outcomes.

Key criteria and features of a multilateral agreement

(Annex 1 Agreement)

- Consensus on the adoption and amendment procedure in Article X of the WTO Agreement.
- Equal rights and obligations for all WTO members.
- No discrimination.
- Possibility to apply the WTO dispute settlement system.

The Doha Ministerial Declaration of 2001 also included a mandate for multilateral negotiations on the reduction or elimination of tariffs and NTBs on environmental goods and services.[203] It should be noted, however, that negotiations on environmental services had already started in January 2000 under the original mandate included in the GATS (i.e., the 'services market access negotiations'),[204] which later became part of the Doha Round.[205] More recently, in 2019, discussions were renewed when a group of members circulated a

201 We will focus on exiting alternatives under current WTO rules, aware of the fact that new modalities may also be possible. See e.g. Mamdouh (2021b) who proposes a new type of agreement, a so-called Annex 5.

202 Since duties and other restrictive regulations of commerce would most presumably not be eliminated on 'substantially all the trade' between the parties (or a substantial sectoral coverage of services), pursuant to Article XXIV of the GATT 1994 and Article V of the GATS, we do not consider the option of a regional trade agreement in this report. This is so, even though regional trade agreements are also plurilateral agreements. Although regional trade agreements are compliant with WTO law, they cannot either be said to be concluded within the WTO.

203 Doha Ministerial Declaration, WT/MIN(01)/DEC/1, adopted 14 November 2001, para. 31(iii).

204 Mandated by Article XIX of the GATS. Negotiations for further specific commitments, take place in the Special Session of the Council for Trade in Services (CTE-SS).

205 Doha Ministerial Declaration, WT/MIN(01)/DEC/1, adopted 14 November 2001, para. 31(iii).

proposal to expand the definition of environmental services to help governments address climate change and achieve the SDGs.[206]

However, since the establishment of the WTO the WTO members have only been able to reach one major multilateral agreement.[207] Even though multilateral negotiations could take place outside a formal round of negotiations, a key challenge is that a multilateral agreement in practice need consensus from the entire WTO membership for the adoption of a new stand-alone multilateral agreement as well as for the formal insertion of it into Annex 1 by an amendment.[208]

The European Commission has also proposed in its non-paper that renewed multilateral negotiations on the climate and environmental issues should take place. Even though it would be desirable for an agreement on climate-relevant goods and services to be multilateral, we will not dwell on its advantages and disadvantages in this report since it seems unlikely that there will be any multilateral negotiations in the short term. Plurilateral agreements can also be multilaterialised at a later time.

7.2 Plurilateral agreements within the WTO

A second option for negotiations at the WTO would be to negotiate a plurilateral agreement. In the aftermath of the failures of the Doha Round, plurilateral negotiations and agreements have come to the forefront in the WTO, even though they have been a standard feature of the multilateral trading system from its creation.[209] There is, however, no clear definition of a *plurilateral agreement*, but it usually refers to an agreement between three or more countries.

The main advantages of plurilateral agreements are that they can be negotiated and implemented faster since there are fewer parties. They can be issue specific in contrast to preferential trade agreements which need to have a substantial coverage.[210] Plurilateral agreements can also create momentum toward multilateral agreements.

A disadvantage is that plurilateral agreements may divide the WTO membership and create a two-track regime in which a group of members play according to and profit from plurilateral agreements.[211] They have also been criticised for being a means to bypass the demands from developing countries for a rebalancing of the WTO's rules.[212] Some developing countries have also raised concerns about plurilateral agreements leading to a disregard and marginalisation of existing multilateral mandates in favour of issues without multilateral mandates.[213]

206 Issued by Australia, Canada, Mexico, New Zealand and Switzerland. Since then, at least the European Union, the Republic of Korea, Mexico and the United Kingdom have also co-sponsored the initiative. See Council for Trade in Services, Special Session, Communication from Australia, Canada, the European Union, the Republic of Korea, Mexico, New Zealand, Switzerland and the United Kingdom – Exploratory discussions on market access: environmental services, JOB/SERV/299/Rev.3, 29 June 2021.

207 Agreement on Trade Facilitation (TFA) from 2013, which was part of the Doha Round.

208 It can, however, be noted that in theory, there is also the possibility to vote in accordance with Article X(1) of the WTO Agreement.

209 Without describing the history of plurilateral agreements in the WTO, it can be noted that plurilateral agreements (or so-called 'codes' or 'codes of conduct') were rather common during the GATT years.

210 Pursuant to Article XXIV of the GATT 1994 and/or Article V of the GATS, a PTA must cover substantially all trade in goods and/or have substantial sectoral coverage of services.

211 Group of Twenty (2019), 8.

212 See, e.g., Kelsey (2021a), p. 4.

213 See, e.g., Kennedy (2012), p. 7 and General Council 1–2 March 2021, The Legal Status of Joint Statement Initiatives' and their Negotiated Outcomes, WT/GC/W/819, 19 February 2021, a communication circulated at the request of the delegations of India and South Africa. Namibia later joined in an updated version.

7.2.1 Annex 4 Agreements

Annex 4 to the WTO Agreement includes the WTO's four formal plurilateral agreements, only two of which remain in force.[214] The remaining agreements are the Agreement on Trade in Civil Aircraft and the Agreement on Government Procurement (GPA).

One option for a new agreement on climate goods, services, TBT issues and fossil fuel subsidies is to design it as a new Annex 4 Agreement. Any agreement that is a 'trade agreement' can be added through the amendment procedure to the list in Annex 4 of the WTO's plurilateral agreements.[215] However, no trade agreement has been added since the WTO's creation. This has been perceived as too difficult as a consensus decision of the Ministerial Conference is required. This means that any WTO member can veto the adoption of a proposed plurilateral agreement.[216] The consensus requirement reflects the exception status of such an agreement within a multilateral organisation.[217]

Key criteria and features of an Annex 4 Agreement

- Trade agreement.
- Consensus decision for its adoption and also for the amendment procedure.
- Rights and obligations are limited to participants.
- Possibility to create new rules.
- New rules do not have to be consistent with existing rules.
- To the extent that the subject matter is already covered by existing rules, the MFN obligation applies.
- Possibility to apply the WTO dispute settlement system.

An Annex 4 Agreement is an agreement which only creates rights and obligations for the participating members[218] and is one of the few exceptions in the legal framework of the WTO to the universal applicability of WTO law. An Annex 4 Agreement has the advantage that the participating parties can create new *rules* or *regulatory disciplines* between themselves. For example, regarding the TBT issues, this could mean that only the participating members would be obliged to apply the MRA on conformity assessment for climate goods or other more far-reaching transparency provisions as well as rely on the specific standards or specific standard setting organisation. Non-participating members would not be required to do so. This would mean a dual system within the WTO in which different obligations would be applied to different WTO members.

Another important feature of Annex 4 Agreements is that they do not have to be consistent with the multilateral WTO agreements. Neither do the multilateral agreements in Annex 1, 2 and 3 to the WTO Agreement need to take precedent over the optional agreements in Annex 4. However, any new commitments may not adversely affect existing rights of other members. Any further commitments on, for example, specific standards or a specific standard setting organisation to be used would be limited to the parties. The parties to the agreement would thus be obliged to comply with the existing disciplines of the TBT Agreement vis-à-vis non-parties.

214 The other two were terminated in 1997.
215 Pursuant to Article X:9 of the WTO Agreement.
216 Article X:9 of the WTO Agreement.
217 Kelsey (2021a), p. 2.
218 Pursuant to Article II:3 of the WTO Agreement.

The MFN obligation

To the extent that the *subject matter* of the agreement falls within the scope of any of the MFN obligations, the benefits of a plurilateral agreement should most certainly be extended to all WTO members. For example, the Agreement on Trade in Civil Aircraft provides that the customs duties on the covered products be eliminated on an MFN basis, while the benefits of the GPA are limited to its members since procurement is generally not covered under the WTO Agreement.[219] All the matters that we discuss in this report, that is, tariffs, liberalisation of services, TBTs and fossil fuel subsidies, are already covered by the WTO Agreement.[220] Therefore, with an Annex 4 Agreement, any favourable commitments on these issues, including, for example, tariffs and services liberalisation, would most certainly need to be extended to non-participating countries on an MFN basis.

This would be positive from a climate perspective, bearing in mind the limited possibilities of doing otherwise within the WTO and the fact that other WTO members would also benefit from, for example, lower tariffs on climate goods and services, thereby lowering the costs of adjustment to a low carbon economy (and with positive spill over effects due to reduced prices via global value chains).

One exception to this can be noted. In practice, the MFN obligation in the TBT Agreement[221] might have little effect on non-participating countries with regard to MRAs. The situation with regards to the MFN principle is not entirely clear. On the one hand, it has been argued in the literature that the MFN obligation in the TBT Agreement means that WTO members recognise the results of the conformity assessment procedures of other WTO members and are also obliged to extend such treatment on an MFN basis.[222] On the other hand, it has been argued that only certain WTO members would be able to claim MFN treatment with regards to commitments in an MRA. Specifically, the only WTO members not party to the MRA who would be able to demand mutual recognition would be WTO members with conformity assessment procedures that are equivalent to the conformity assessment procedures of a WTO member that is party to the MRA,[223] that is, those in comparable situations. This indicates that the MFN principle would only be applicable to specific situations. As MRAs require a high level of trust between the parties, significant knowledge of the respective regulatory systems and constant regulatory dialogue, there could be limited possibilities to consider other members as being in a comparable situation.

Critical mass provisions

To mitigate the effects of the MFN applicability and limit the risk of free riding from non-participating countries, a so-called *critical mass provision* could be used in the negotiations of an Annex 4 Agreement. Another option to limit the benefits of non-participating countries would be through a waiver (for more information regarding waivers, see section 7.3.2). Benefits can also be afforded to LDCs without having to extend them on an MFN

219 See, e.g., Adlung & Mamdouh (2017), p. 17–18 and Kennedy (2012), p. 9–10, who note that there is a discussion whether the MFN obligations apply or not.

220 Kennedy (2012), p. 2.

221 The TBT Agreement contains an MFN obligation relating to conformity assessment in Article 5.1.1 of the TBT Agreement.

222 See, for example, Zell (2016) and Bartels (2005).

223 Zell (2016), p. 22. Such an interpretation is supported by the fact that Article 5.1.1 of the TBT Agreement, which contains the MFN principle with regards to conformity assessment procedures, specifically states that MFN treatment is to be granted to suppliers of like products in a comparable situation. The importance of assessing whether suppliers are in a comparable situation was also discussed in the case Russia — Railway Equipment (2020).

basis.[224] This could be positive in that it could further encourage participation in an agreement and facilitate the climate transition.

A critical mass provision is usually used to limit the risk of free riding by non-participating WTO members that benefit from an agreement. Due to the MFN obligation, any benefits of an agreement would have to be extended on an MFN basis, without non-participating members having to give anything in return. Thus, the risk of free riding could be large. However, if a certain number of countries participate in an agreement, the risk could be reduced. The critical mass could be defined in different ways, but generally it is defined as a market share of 80 percent or more.[225] Usually all major participants in the sector are expected to join.

Institutional issues

One advantage of Annex 4 agreements is that they form part of the legal framework of the WTO. Thus, they belong to the institutional structures and could also, if so agreed by the participating members, be supervised and enforced by the WTO dispute settlement system through the Dispute Settlement Understanding (DSU).[226]

Annex 4 Agreement conclusions

In sum, an Annex 4 Agreement would be a flexible and legally clear option to implement an ambitious plurilateral outcome within the WTO, covering both tariff and service liberalisation as well as rules on fossil fuel subsidies and TBT issues. This alternative would have high potential to contribute to global climate action. However, this is presently not a realistic alternative from a trade policy perspective because of the consensus requirement for an Annex 4 Agreement. Nevertheless, in contrast to a multilateral agreement, the consensus requirement would only mean that the parties to the agreement would be bound by any commitments regarding fossil fuel subsidies and TBT issues, and any tariff or services liberalisation would most certainly be extended to non-participating members on an MFN basis.

7.2.2 Reference Paper type agreement

Although not explicitly provided for by the WTO Agreement, a plurilateral agreement can also be negotiated as a *Reference Paper type agreement*, as we will call it here. Other names are for example an open plurilateral agreement, sectoral or an issue-based plurilateral agreement or a critical mass agreement.[227] They all have in common that they are reserved for a certain topic or sector. ITA[228] and ITA II as well as the Fourth and Fifth Protocols to the GATS on basic telecommunications[229] and financial services[230] are examples of such an agreement. The Environmental Goods Agreement was also envisaged as such an agreement. Several of the currently negotiated Joint Statement Initiatives (JSI) launched at the Ministerial Conference in Buenos Aires are also said to belong to this type of agreement. As none of them have yet been concluded, their exact legal form remains uncertain.

224 For more information, see Kennedy (2012), p. 10.
225 Adlung & Mamdouh (2017), p. 2.
226 The agreement would have to be added to the so-called 'covered agreements' by the DSU, which are listed in Appendix 1 to the DSU on Agreements Covered by the Understanding.
227 See, e.g., Group of Twenty (2019); and Hoekman (2019), p.13.
228 The Information Technology Agreement. It was adopted as a ministerial declaration, i.e., Ministerial Declaration on Trade in Information Technology Products, WT/ MIN(96)/16, 13 December 1996.
229 Fourth protocol to the General Agreement on Trade in Services, Services: Protocols, S/L/20, 30 April 1996.
230 Fifth protocol to the General Agreement on Trade in Services, Financial services: Protocols, S/L/45, 3 December 1997.

Facts

Environmental Goods Agreement

Fourteen WTO members began negotiations on the Environmental Goods Agreement in July 2014. In the end, the negotiations included 18 participants, representing 46 WTO members.

The aim of the negotiations was to eliminate tariffs on environmental goods. Without including them in the negotiations at the time, the agreement also stated that services and non-tariff barriers could be handled in separate work programmes.

A Reference paper type agreement can include concessions on both tariffs on specified products under the GATT 1994 as well as commitments on sector-specific services under the GATS.[231] There is a discussion as to whether such an agreement could also cover rules or regulatory disciplines regarding goods and services[232] as contemplated, for example, by proponents of some of the Joint Statement Initiatives. A commonly referred to previous example of such disciplines is the so-called Reference Paper on Telecommunications.[233] Besides sector-specific commitments under Part III of the GATS, which deals with market access and national treatment, the reference paper included new commitments (undertakings) in the form of new regulatory principles, which were inscribed in the schedules of additional commitments under Article XVIII.[234]

As regards the issues covered in this report, it is legally uncertain but possible that, for example, the TBT issues could be addressed through the use of a Reference Paper type agreement.[235] The same goes for disciplines on fossil fuel subsidies. With this approach, the parties to the agreement could possibly agree in a template on the rules and disciplines on fossil fuel subsidies, which they would then individually implement in their goods and/or services schedules as deemed relevant. Regarding specified products, the parties could, for example, possibly agree under the GATT 1994 to prohibit or make actionable fossil fuel subsidies for those specific products. Likewise, for services, the parties could, for example, possibly agree to prohibit or make actionable fossil fuel subsidies within certain sectors, preferably based on an analysis of those sectors in which fossil fuel subsidies lead to the most emissions.

Implementation of commitments

To integrate this type of agreement into the legal framework of the WTO, the participating WTO members would have to individually amend their goods and services schedules by

231 Article II (Schedules of Concessions) of the GATT 1994 sets out the scope of the GATT schedule, while Article XX (Schedules of Specific Commitments) of the GATS sets out the scope of the GATS schedule.

232 See, e.g., Kennedy (2012); Adlung & Mamdouh (2017); Mamdouh (2021b); Kelsey (2021a, 2021b); and UNCTAD (2021), p. 23.

233 It was developed by a group of countries and then inscribed, sometimes with variations, in the schedules of commitments as Additional Commitments under Article XVIII of the GATS.

234 An allegedly important feature of the negotiations of, e.g., financial services and the regulation of basic telecommunication services, is that they were both conducted under multilateral mandates that were supervised by WTO bodies. For more information, see, e.g., Kelsey (2021a), p. 3. For another view, see Adlung & Mamdouh (2017), p. 8.

235 The concessions could, e.g., be inscribed in Part III on non-tariff concessions or in a new Part V of the goods schedules.

means of a decision of certifications of modifications.[236] Any new rules would take the form of scheduled commitments or concessions for each member that scheduled a commitment or concession, and thereby only create individual obligations for that member.

Meanwhile, in order to ensure that the individual members would commit to the same outcome, the common rules or regulatory disciplines could, for example, be set out in a common reference paper, template or protocol which could be annexed to the sectoral schedules and inscribed as undertakings in the column of 'additional commitments', similarly to what was done with the Reference Paper on Basic Telecommunications.[237] Non-participating members could object to services modifications during the certification procedure, but in practice, this may have little effect and it is not the same as vetoing a consensus decision.[238]

Regarding substance, any new commitments could only add to the scheduling member's existing obligations and provide improvements in terms of enhanced liberalisation.[239] The commitments could not limit or alter any existing obligations or provisions of the GATT 1994 or GATS.[240] Instead, the main agreements, that is, the GATT 1994 and the GATS, and all of the other existing obligations and disciplines of the respective members would apply in the same way to the new commitments. Plurilateral agreements implemented through unilateral changes of schedules become an integral part of the legal framework of the WTO Agreement.[241] As such, they also benefit from the WTO institutional framework and can also be enforced through its dispute settlement system.

Furthermore, any new commitments may not adversely affect existing rights of other members, and, in line with the MFN obligation in Article I:1 of the GATT 1994 and Article II:1 of the GATS, the tariff concessions or services commitments would have to be extended to all WTO members.[242] So far, this type of plurilateral agreement has also been open for other WTO members to join at a later date.

The entering into force of the agreement and the implementation of the plurilateral outcome could then be conditioned by different provisions and procedural requirements.[243] One of the most common is the inclusion of a critical mass provision to limit the risk of free riding by non-participating WTO members that benefit from such an agreement. In addition to a critical mass provision, other provisions could be inserted in the agreement, including for example review clauses.

236 For goods, the Procedures for Modification and Rectification of Schedules of Tariff Concessions, L/4962, BISD 27S/25, adopted on 26 March 1980, apply pursuant to Article XXVIII of the GATT 1994. For services, Procedures for the Implementation of Article XXI of the General Agreement on Trade in Services (GATS), adopted by theCouncil for Trade in Services on 19 July 1999, S/L/80 (29 October 1999) and Procedures for the Certification of Rectifications or Improvements to Schedules of Specific Commitments, adopted by the Council for Trade in Services on 14 April 2000, S/L/84 (18 April 2000) apply, pursuant to Article XXI of the GATS.

237 Pursuant to Article XVIII of the GATS. For more information, see, e.g., Mamdouh (2021b), p. 9–11.

238 Mamdouh (2021a), p. 2, and Mamdouh (2021b), p. 9.

239 Mamdouh (2021a), p. 2.

240 See, e.g., GATT panel report in US — Sugar, adopted 22 June 1989, BISD 36S/331, para.5.7; Appellate Body report in EC — Bananas III (1997), paras 154; and Appellate Body report in EC — Sugar (2005), para. 220.

241 Pursuant to Article II:7 of the GATT 1994 and Article XX:3 of the GATS. In the Appellate Body Report EC — Computer Equipment (1998), para. 109, the Appellate Body clarified that 'the fact that Members' Schedules are an integral part of the GATT 1994 indicates that, while each Schedule represents the tariff commitments made by one Member, they represent a common agreement among all Members'.

242 However, the MFN obligation on services would depend on any relevant exemptions that the participating members would have entered into under Article II of the GATS.

243 Mamdouh (2021a), p. 3.

Critical mass provision

Both the ITA and the contemplated Environmental Goods Agreement included critical mass provisions. As mentioned earlier, the critical mass could be defined in different ways, but it is usually defined as a market share of 80 percent or more.[244] Usually all major participants in the sector are expected to join. In the ITA, for example, it was determined that the agreement should be implemented provided that the participants represented approximately 90 percent of the world trade in information technology products.[245]

Reference Paper type agreement conclusions

To sum up, the Reference Paper type agreement could cover tariff reductions and sectoral services commitments and possibly also disciplines on TBT issues as well as fossil fuel subsidies. It is, however, unclear whether and to what extent such an agreement could also cover rules or regulatory disciplines regarding fossil fuel subsidies and TBT issues. Since there is no consensus requirement for this type of agreement, this is an easy way to implement a plurilateral outcome.

Key criteria and features of a Reference Paper type agreement

- Individual modification of schedules of concessions under the GATT 1994 and commitments under the GATS.
- Only additional commitments and improvements possible.
- May not adversely affect existing rights of other members.
- MFN obligation applies.
- A critical mass provision may be politically necessary to avoid free riding.
- Possibility to apply the WTO dispute settlement system.

7.3 Other ways of implementing plurilateral outcomes within the WTO

Besides the negotiation and conclusion of a plurilateral agreement, there are different ways to implement plurilateral outcomes to make them legally binding.

7.3.1 Amendments (Article X of the WTO Agreement)

One way to implement a plurilateral outcome in the WTO would be to amend one or several of the existing agreements. This could, for example, be an alternative for disciplines on fossil fuel subsidies and TBT issues.

Pursuant to Article X(3) and X(4) of the WTO Agreement, amendments to the provisions of the Multilateral Trade Agreements in Annex 1A, which includes both the SCM Agreement as well as the TBT Agreement, can be made. An amendment setting out the special regime for fossil fuel subsidies or TBT issues could, for example, be included in an Annex to the main agreements. The same provision also applies to the adding of new standalone agreements in Annex 1, which could include a new agreement on fossil fuel subsidies.

244 Adlung & Mamdouh (2017), p. 2.

245 Annex: Modalities and Product Coverage to the Ministerial Declaration on Trade in Information Technology Products, WT/ MIN(96)/16, 13 December 1996, para. 4.

In practice, the consensus decision-making procedure has normally[246] been applied for amendments. It may, therefore, be difficult to agree on amendments to the TBT Agreement or the SCM Agreement as well as on a new agreement for fossil fuel subsidies. Nevertheless, there is a voting mechanism stating that a number of amendments can be made upon acceptance by two-thirds of the members.

7.3.2 Waiver

Another solution for achieving a plurilateral outcome could be to apply for a waiver.[247] A waiver cannot be used to negotiate or conclude a plurilateral agreement in the direct sense, but it can be used to exempt the participating WTO members from certain other WTO obligations. In effect, this could lead to a plurilateral outcome or facilitate a plurilateral outcome. In addition, a waiver could be used to complement a plurilateral agreement. A waiver could, for example, be used to limit the legal uncertainties of including EPPs that are usually considered like products; see section 3.1.2. To encourage the participation of more developing countries, such a waiver could be limited to EPPs under which developing countries have a comparative advantage.

When a member or a group of members find it difficult or impossible to fulfil the obligations under the WTO Agreement or according to any of the multilateral trade agreements, the member or members can apply to get an exemption from the problematic obligations through a waiver. These can be justified if there are *exceptional circumstances.*[248] If the inclusion of EPPs would be considered important to save the climate and combat global warming, exceptional circumstances should reasonably be deemed to exist.[249] However, it may be difficult to have a waiver approved as in practice, all decisions on waivers are taken by consensus.[250]

7.3.3 Other ways

Besides amending current rules or waiving current obligations to implement plurilateral outcomes, there could be other means that could be contemplated on their own or in combination with other options. This includes, for example, moratoriums[251] on tariffs or other issues or peace clauses[252] .[253] Other options could include authoritative interpretations, non-binding recommendations or declarations such as those recently agreed to in the Informal Working Group on Micro, Small- and Medium-sized Enterprises.[254]

246 Article IX:1 of the WTO Agreement.
247 Pursuant to Article XVI:4 in the WTO Agreement.
248 Article IX:3 in the WTO Agreement.
249 For e.g., the European Parliament has adopted a resolution on the climate policy emergency.
250 Van den Bossche & Zdouc (2017), p. 125.
251 Such as, e.g., the e-commerce moratorium under which WTO members have promised to not impose customs duties on electronic transmissions until the 12th Ministerial Conference or the moratorium on the suspension of initiation of non-violation and situation complaints with regard to the TRIPS Agreement, which was originally agreed upon at the Doha Ministerial Conference.
252 There is a 'peace clause' or 'due restraint' clause in the AoA which basically stipulates that agricultural subsidies that are legal under the AoA cannot be challenged under other WTO agreements, in particular under the SCM Agreement and GATT 1994. It expired at the end of 2003.
253 For more information, see, e.g., Kennedy (2012), p. 39.
254 For more information, see WTO | 2021 News items - Working group on small business finalises MC12 draft declaration.

7.4 Participation of developing countries

A more novel implementation of SDT in a WTO agreement was adopted in the Agreement on Trade Facilitation (TFA) in 2017. The TFA model is also interesting to consider for other negotiations in the WTO. In the agreement, the individual members were allowed to make a gradual implementation of commitments linked to the capacity of developing and least developing countries to do so. The LDSs were also allowed greater flexibility in implementation than developing countries. The commitments were divided into three different categories.

The first category of commitments (category A) included commitments for immediate implementation at the time of the adoption of the agreement. The second category (category B) included commitments that would be implemented within a transitional time period decided by the relevant member. The third category (Category C) included commitments that would also be implemented within a transitional period but that would also be conditional on technical assistance being provided by other members.

Combining an agreement with provisions of different categories might increase low-income members' willingness to join and accept an agreement.[255] It could also facilitate greater participation by developing countries and future multilateralisation of any negotiated outcome.

7.5 A stand-alone agreement outside the WTO

If it becomes impossible to negotiate or implement a plurilateral agreement within the WTO, another option could be to negotiate and implement an agreement outside of the WTO, like, for example, the anti-counterfeiting trade agreement (ACTA) or the ongoing negotiations on the Trade in Services Agreement (TiSA) or the Agreement on Climate Change, Trade and Sustainability.[256] In particular, this could be relevant for disciplines on fossil fuel subsidies as a few WTO members have shown strong opposition to discussing the issues in the WTO. The agreement could be incorporated in the WTO framework at a later date.

Key criteria and features of a stand-alone agreement outside of the WTO

- Has to be WTO compliant (only additional commitments and improvements possible. It may not adversely affect existing rights of other members).
- MFN obligation applies.
- A critical mass provision may be politically necessary to avoid free riding.
- No possibility to apply the WTO dispute settlement system.

Outside of the WTO, plurilateral agreements can be negotiated to complement or (in certain limited cases) to reinforce existing WTO rules. For WTO members, any agreement outside of the WTO must be WTO consistent (and MFN applies). A critical mass provision may, therefore, be politically necessary to avoid free riding. An advantage is that the negotiation and adoption of an agreement would not require consent from the WTO Ministerial Conference. Nevertheless, it should presumably be considered a last resort. Such an agreement would not benefit from the WTO institutional framework and in particular, its dispute settlement system. Negotiating an agreement outside of the WTO could potentially also have a negative effect on the WTO's ongoing negotiations and, more generally, on the WTO's central role in trade governance.

255 Cf. Adlung & Mamdouh (2017), p. 18.
256 ACTA never entered into force.

7.6 Conclusions and recommendations

In this chapter, we have reviewed different legal options for designing an agreement on climate-relevant goods, TBT issues, services and fossil fuel subsidies. From a legal perspective, an agreement covering all the areas should **ideally be designed as an Annex 4 Agreement**. An Annex 4 Agreement would be a legally clear option to implement an ambitious plurilateral outcome within the WTO. This alternative would have the highest potential to contribute to global climate action since it could include urgently needed comprehensive commitments and provisions in all of the areas covered in this study. However, given the consensus requirement for an Annex 4 Agreement, this is not from a trade policy perspective a currently realistic alternative.

A more realistic option would be a Reference Paper type agreement. Such an agreement could cover tariff reductions and sectoral services commitments and possibly also disciplines on TBT issues and fossil fuel subsidies. However, it is unclear whether and to what extent such an agreement could also cover rules on fossil fuel subsidies and further commitments on TBTs for climate goods. Yet another politically feasible option could be to negotiate the tariff reductions and sectoral services commitment in a Reference Paper type agreement in a first phase. Then the more ambitious issues could be negotiated as an Annex 4 Agreement, in a second phase, or as amendments or in parallel to a Reference Paper type agreement on tariff reductions and sectoral services commitments. Negotiations on services could also take place within ongoing services negotiations in the Committee on Trade in Services, Special Session. If there are politically sensitive issues, not all of the participating members necessarily have to participate in the negotiations on all the issues but could pick and choose as they deem fit. In any case, in light of the urgent climate crisis, we recommend that negotiations start on all issues as soon as possible and that any outcomes be implemented separately as soon as they are concluded.

Due to the MFN obligation, both participating WTO members as well as non-participating members would most certainly benefit from the liberalisation of climate goods and services and the lower costs of adjustment to a low carbon economy. Most non-participating members would also indirectly benefit from new disciplines on fossil fuel subsidies as well as the fact that the participating members would not subsidise their industries.[257]

Waivers, moratoria and peace clauses are examples of other ways forward, but our assessment is that they are more challenging and would need further consideration. As a last resort, but for various reasons not recommendable, there is a possibility to negotiate and implement an agreement outside of the WTO.

To increase low-income members' willingness to join and accept an agreement, **combining an agreement with SDT provisions in different categories like in the TFA could be a good option**. It could also facilitate greater participation by developing countries and the future multilateralisation of any negotiated outcome.

257 Exports from some fossil fuel producing countries could decrease if consumer subsidies in other countries were phased out.

8 Discussion

Goods, services and fossil fuel subsidy reform

Tariff elimination and actions to address non-tariff barriers for climate goods would reduce the cost of climate mitigation action and promote the spread of climate friendly technology along with a freer flow of goods across borders. As non-tariff barriers have been shown to have a larger negative impact on trade than tariffs in this area, we see actions to address these as key to negotiations. This is also of key importance to developing countries. Services should form a cornerstone of the negotiations as they are critical to the dissemination of the technologies and knowledge needed for the climate transition both in their own right and as compliments to climate goods.

All inefficient fossil fuel subsidies have detrimental climate effects and distort trade, and the phase out of such subsidies is almost certainly necessary to reach the Paris targets. For example, the most comprehensive study to estimate the effect of a removal of both consumer and producer subsidies showed that in 2010, emissions would have been 36 percent lower than the actual emissions that year.[258] The reform of subsidies is also recognised as a vital component of the transition to a sustainable future.[259] This is why we believe that an agreement needs to create binding and enforceable disciplines that prohibit all inefficient fossil fuel subsidies. Even though it is very hard to estimate and compare the emission reduction potential from the different areas, the available studies suggest that a fossil fuel subsidy phaseout could lead to much larger effects than, for example, tariff liberalisation.

A clear mandate

A clear mandate with a statement of purpose[260] could facilitate negotiations on all of the topics covered in this report and would enable updates and reviews of an agreement by clarifying its scope.[261] The objective of a climate agreement could be to phase out fossil fuel subsidies and promote the spread of knowledge and technologies that support the transition to a low carbon economy by reducing barriers to trade in goods and services relevant to greenhouse gas emission reductions.

As effective mitigation efforts are country and context specific, it would be particularly challenging to draft a precise definition or draw criteria for climate goods and services that would both be justifiable for all circumstances and that would appeal to a wide range of potential signatories. The approach taken in the negotiations for the Environmental Goods Agreement could be replicated in which negotiators are required to justify how proposed goods fulfil the climate aim. This could also be annexed to the final agreement,[262] as all sectoral WTO agreements identify products covered.

258 Stefanski (2016).
259 ICTSD (2018), p. 2.
260 Cosbey (2015); De Melo & Solleder (2019a); Steenblik (2005).
261 In its non-paper, the European Commission suggested that an 'understanding' could be used to clarify the scope of services lined to climate mitigation. In services trade, there is, for example, an 'Understanding on the scope of coverage of CPC 84 – Computer and Related Services'.
262 In order to make the understanding binding for the parties, the parties could insert a note in their schedules of commitments. Since schedules are an integral part of the GATT 1994 pursuant to Article II:7of the GATT 1994, those obligations would become binding on the members concerned.

Critical mass for goods and services

With both an Annex 4 Agreement and a Reference Paper type agreement, any commitments would have to be extended on an MFN basis to non-participating WTO members. This raises the question of whether there is the need for a critical mass provision to limit the risk of free riding by non-participating countries.

From a climate perspective, a negotiated agreement would have the largest effect if the largest greenhouse gas emitters and major trading partners of the products and services covered took part (see table 6 with overview of the top 10 greenhouse gas emitters and environmental goods importers). A critical mass provision could, therefore, increase the climate impact of an agreement. Even without a critical mass provision, participating WTO members would benefit from lower tariffs on climate goods and services, thereby lowering the costs of adjustment to a low carbon economy (and with positive spill over effects due to reduced prices via global value chains). Therefore, we consider that WTO members interested in negotiating tariff reductions on climate-relevant goods and services should not be deterred if one or two of the larger players do not participate and that a critical mass provision is not a necessity.

Table 6 — Top 10 GHG emitters and environmental goods importers

Top 10 GHG emitters (% global GHG emissions)	Indicative top 10 environmental goods importers*
China (26.1%)	United States
USA (12.7%)	China
EU (7.5%)	Germany
India (7.1%)	Mexico
Russia (5.4%)	Great Britain
Japan (2.5%)	France
Brazil (2.2%)	Japan
Indonesia (2.0%)	Canada
Iran (1.7%)	Korea
Canada (1.5%)	Hong Kong

Source: Climate Watch, 2018 data, total excluding land use change and forestry.

*Statistics based on CLEG list

Source: OECD, 2016 data

We also consider it important that non-participating countries have the ability to join the agreement at a later stage and suggest that an agreement should include clauses to facilitate this and that negotiations are open and transparent in order to encourage broad participation.

Critical mass for fossil fuel subsidy reform

The emissions savings from a unilateral or limited plurilateral phasing out of fossil fuel subsidies can be reduced due to carbon leakage. Therefore, free riding has a more pronounced effect on the climate effectiveness of an agreement on fossil fuel subsidies than for goods and services liberalisation. In order to overcome leakage problems, a negotiated agreement would benefit from some form of critical mass provision. Choosing a threshold for critical mass could be informed by analysis or modelling of the costs and benefits of different participation levels given estimated leakage effects. The climate benefits of an agreement would increase as more of the major trading nations that heavily subsidise fossil fuels participate (see table 7 for an overview of the 10 main providers of fossil fuel subsidies and their share of total).

Table 7. Top 10 providers of fossil fuel subsidies and share of total

Country	Average fossil fuel subsidies for 2015–2019 in bnUSD	Share of total
Islamic Republic of Iran	55.3	14.2%
Saudi Arabia	37.4	9.6%
China	22.2	5.7%
Egypt	17.4	4.5%
United Kingdom	16.9	4.3%
Venezuela	16.0	4.1%
Italy	12.7	3.3%
Algeria	11.9	3.0%
Argentina	11.8	3.0%
India	11.7	3.0%

Source: Own calculations based on data from FossilFuelSubsidyTracker.org

To aim for broad participation would not be unrealistic as all WTO members have agreed to rationalise inefficient fossil fuel subsidies that encourage wasteful consumption under the SDG 12.c. Broad participation might facilitate agreement on more ambitious disciplines, as the risk for leakage and loss of competitiveness would be reduced. Depending on the appraisal of the benefits of lower critical mass thresholds, an agreement may still be judged worthwhile even if it lacks agreement from some of the trading nations which are major fossil fuel subsidisers.

9 Concluding remarks

In this report, we have shown what an agreement on trade and climate could and should include as well as options for its legal design. We believe that our analysis and recommendations could be of concrete and direct use in the various and ongoing talks and proposals on trade and climate as well as in facilitating concrete ways to move forward.

As Sweden is a member of the European Union, we consider it important that the European Union, with the European Commission at the forefront, is proactive and ambitious, and engages in a leading role in negotiations on all matters. This could also help the European Union achieve its own climate ambition of becoming the world's first climate-neutral continent by 2050.

To conclude, for the WTO and its members to contribute in a meaningful way to a reduction in greenhouse gas emissions in line with the Paris Agreement, we consider it of utmost importance that the WTO members launch ambitious negotiations at the MC12 to liberalise trade in climate goods and services as well as to address TBTs and fossil fuel subsidy reforms.

The launch of negotiations on climate-relevant issues at the MC12 and a prompt conclusion of negotiations could also restore confidence in the WTO and show that the WTO is highly relevant and able to work on important matters for future generations. The alternative is that negotiations on important trade issues will be conducted outside of the WTO, weakening the role of the global trade forum and ultimately the multilateral trade system.

The IPCC's newly released sixth climate report on the physical science of climate change[263] confirmed that the 1.5°C temperature goal of the Paris Agreement will not be reached unless immediate and drastic moves to cut greenhouse gas emissions are made. Without immediate action, global temperatures will continue to increase, leading to devastating effects on the planet and humanity.

263 IPCC (2021).

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Short title	Full case title and citation
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Sammanfattning på svenska

Summary in Swedish

I den här rapporten analyseras vilka möjligheter WTO och dess medlemmar har att främja Parisavtalets klimatmål genom ett plurilateralt handelsavtal.

Rapporten omfattar frågor som rör liberalisering av handeln med klimatvänliga varor och tjänster (härefter klimatvaror och klimattjänster) samt begränsningar av subventioner för fossila bränslen. Vi kombinerar ekonomisk och juridisk analys och ger policyrekommendationer om vägar framåt. Vi ger först förslag på vad som borde förhandlas utifrån mest klimatnytta inom WTO. Därefter redogör vi för hur sådana förhandlingsresultat skulle kunna implementeras i ett avtal.

Vi rekommenderar att parterna strävar efter nolltullar för så många klimatvaror och insatsvaror som möjligt. Det skulle minska kostnader för att minska koldioxidutsläppen och främja spridningen av klimatvänlig teknologi internationellt. Vår analys visar ett stort antal klimatvaror och insatsvaror som skulle kunna liberaliseras. Vår genomgång av IPCC:s rekommendationer för utsläppsminskningar visar nya kategorier som kan komplettera de som använts i tidigare förhandlingar. De fyra nya kategorierna för områden som vi föreslår är: klimatinfrastruktur, teknologier för att stödja beteendeförändringar, cirkulär ekonomi samt jordbruk, mark och skogsvård.

Förutom ett borttagande av tullar bör ett avtal även innefatta borttaganden av andra handelshinder, framför allt tekniska handelshinder. Det skulle öka både klimateffekterna och de ekonomiska effekterna av ett avtal.

Vår utredning redovisar vidare hur överenskommelser om tekniska handelshinder för klimatvaror skulle kunna bidra till klimatomställningen. Här finns ett antal mekanismer att tillgå. Vissa av dem, särskilt ett avtal om ömsesidigt erkännande (multilateral recognition agreement, MRA), kräver en hög nivå av förtroende mellan parterna och en djup förståelse för parternas respektive regelsystem. Det kan vara svårt att genomföra när många olika länder är inblandade. En särskild utmaning kan vara bristen på nationell kvalitetsinfrastruktur i vissa länder och behovet av kapacitetsuppbyggnad för att sådana länder ska kunna dra nytta av ett MRA. Därför skulle andra tillvägagångssätt, till exempel bestämmelser om informationsutbyte mellan parterna, kunna användas. Det skulle bli ett första steg i att bygga upp förtroende för varandras regelsystem. En annan mekanism att överväga är harmonisering av internationella standarder som är relevanta för klimatvaror.

Tjänster är avgörande för att främja spridning av teknologi och kunskap för klimatomställningen. Det gäller tjänster både i egen kapacitet och som komplement till klimatvaror. Därför är förhandlingar om ytterligare marknadstillträde för tjänster som är relevanta för minskningen av växthusgaser, ytterst viktiga. Tjänster som är avgörande för klimatomställningen, såsom ingenjörs- eller arkitekttjänster, bör liberaliseras utifrån sina bidrag till utsläppsminskning (klimatklustring). Samma kategorier som använts i tidigare förhandlingar för klimatvaror och våra fyra nya föreslagna kategorier bör användas också för att identifiera klimatrelevanta tjänster.

Alla ineffektiva fossila bränslesubventioner har skadliga klimateffekter och påverkar dessutom förutsättningarna för internationell handel på ett negativt sätt. En utfasning av sådana subventioner är också med största sannolikhet nödvändig för att klara av Parisavtalets mål. Vi analyserar nuvarande avtal som reglerar subventioner inom WTO, och visar att det baserat på dessa finns många lovande alternativ för att utforma bindande och verkställbara regleringar för fossila bränslesubventioner. Vi drar också slutsatsen att en reglering som förbjuder alla, eller så många ineffektiva fossila bränslesubventioner som möjligt, ger den största fördelen när det gäller utsläppsminskningar. Detta skulle också minimera snedvridningen av handeln. Vissa fossila bränslesubventioner som kan hävdas vara mindre ineffektiva, till exempel skattenedsättningar förknippade med koldioxidprissättning, skulle kunna hanteras på andra sätt. Till exempel genom att vara helt tillåtna, tillåtna under vissa förutsättningar, eller under åtaganden att minska över tid.

Ur ett klimat- och utvecklingsperspektiv är det viktigt att också utvecklingsländer deltar i ett klimatavtal. För att bidra till detta bör parterna överväga stöd till kapacitetsuppbyggnad, finansiering för teknologiöverföring och stöd till utvecklingsländer att identifiera klimatvaror och -tjänster som är relevanta för deras intressen. Det är även viktigt att inkludera utvecklingsländer i förhandlingar om regleringar av fossila bränslesubventioner och frågor om tekniska handelshinder (TBT). Vi anser att den modell som använts i WTO:s avtal om förenklade handelsprocedurer, där utvecklingsländerna har längre tid på sig att genomföra vissa åtaganden och där andra åtaganden villkoras av tekniskt bistånd till utvecklingsländerna, är mycket relevant för alla områden som omfattas av ett klimatinriktat WTO-avtal. Detta skulle också kunna öka utvecklingsländernas vilja att ingå i avtalet.

Ur ett juridiskt perspektiv bör ett avtal som omfattar alla områdena allra helst utformas som ett så kallat bilaga 4-avtal. Ett bilaga 4-avtal skulle vara ett juridiskt klart alternativ för att implementera ett ambitiöst plurilateralt förhandlingsresultat inom WTO. Detta alternativ skulle ha störst möjlighet att bidra till globala klimatåtgärder eftersom det skulle kunna inkludera omfattande åtaganden och bestämmelser på alla områden som omfattas av denna utredning. Men ett bilaga 4-avtal kräver konsensus hos alla WTO:s medlemmar, även de som inte ingår i det plurilaterala avtalet. Därför är inte detta ett realistiskt alternativ från ett handelspolitiskt perspektiv.

Ett mer realistiskt alternativ till juridiskt avtal skulle vara ett så kallat referenspapperstypavtal. Ett sådant avtal kan omfatta tullsänkningar och sektoriella tjänsteåtaganden. Det är dock oklart om och i vilken utsträckning ett sådant avtal även skulle kunna omfatta regler om fossila bränslesubventioner och ytterligare åtaganden om TBT för klimatvaror. Ett annat politiskt möjligt alternativ skulle kunna vara att börja med att förhandla om tullsänkningar och sektoriella tjänsteåtaganden i ett referenspapperstypavtal. Därefter skulle de mer ambitiösa frågorna kunna förhandlas i ett bilaga 4-avtal eller genom ändringar i befintliga avtal, eller parallellt med ett referenspapperstypavtal om tullsänkningar och sektoriella tjänsteåtaganden.

Förhandlingar om tjänster skulle kunna äga rum inom pågående tjänsteförhandlingar i WTO:s kommitté för tjänstehandel. Mot bakgrund av att klimatkrisen är akut bör förhandlingar om alla frågor inledas så snart som möjligt, och överenskommelser implementeras successivt så snart de är klara.

Friare handel med teknologier och tjänster som begränsar påverkan på klimatet skulle ha den största effekten om de länder som släpper ut mest växthusgaser och de viktigaste handelsaktörerna för de inkluderade produkterna och tjänsterna deltar i ett avtal. Därför skulle en bestämmelse om kritisk massa kunna öka klimatnyttan av ett avtal. Kritisk massa innebär att det bara träder i kraft om ett visst antal parter ingår i avtalet. Det skulle också minska risken för att parter utanför avtalet åker snålskjuts på det utan att själva bidra. Men även utan en bestämmelse om kritisk massa, skulle avtalsparterna dra nytta av

lägre tullar på klimatvaror och liberaliserad handel med tjänster. Det sänker anpassningskostnaderna till en ekonomi med låga koldioxidutsläpp (och har positiva spridningseffekter på grund av sänkta priser i globala leverantörskedjor). Därför anser vi att WTO-medlemmar som är intresserade av att förhandla om tullsänkningar på klimatrelevanta varor och tjänster inte bör avskräckas även om ett antal av de större handelsaktörerna inte deltar och att en bestämmelse om kritisk massa inte är en nödvändighet.

På grund av riskerna för så kallat koldioxidläckage (när företag flyttar produktion från länder med stränga krav på koldioxidutsläpp, till länder där kraven inte är lika hårda) när länder fasar ut fossila bränslesubventioner, kan problemet med att länder står utanför ett avtal och åker snålskjuts få en mer uttalad effekt för regleringar om subventionsbegränsningar än för liberalisering av varor och tjänster. För att komma till rätta med läckageproblematiken, skulle ett avtal för sådana subventionsbegränsningar kunna gynnas av någon form av kritisk massa-bestämmelse. Hur stor den kritiska massan behöver vara kan bedömas utifrån en analys eller modellering av kostnaderna och fördelarna med olika deltagandenivåer givet uppskattade läckageeffekter.

Klimatnyttan av ett avtal skulle öka i takt med att flera av de stora handelsnationerna som kraftigt subventionerar fossila bränslen deltar. Om många deltar skulle det sannolikt också göra det möjligt för avtalsparterna att uppnå mer ambitiösa regleringar, eftersom risken för läckage och förlust av konkurrenskraft skulle minska. Trots detta behöver inte alla större handelsnationer eller de största utbetalarna av subventioner för fossila bränslen nödvändigtvis delta i ett avtal för att det ska vara effektivt och lönsamt.

Vi rekommenderar att WTO-medlemmarna så snart som möjligt inleder ambitiösa och inkluderande förhandlingar om ett avtal med syfte att liberalisera handeln med klimatvaror och tjänster inklusive tekniska handelshinder samt om en reform av subventioner för fossila bränslen. Detta för att säkerställa att handeln och handelspolitiken bidrar till att uppnå temperaturmålet i Parisavtalet, i linje med åtagandena i Agenda 2030 och WTO-avtalet.

The National Board of Trade Sweden is the government agency for international trade, the EU internal market and trade policy. Our mission is to facilitate free and open trade with transparent rules as well as free movement in the EU internal market.

Our goal is a well-functioning internal market, an external EU trade policy based on free trade and an open and strong multilateral trading system.

We provide the Swedish Government with analysis, reports and policy recommendations. We also participate in international meetings and negotiations.

The National Board of Trade, via SOLVIT, helps businesses and citizens encountering obstacles to free movement. We also host several networks with business organisations and authorities which aims to facilitate trade.

As an expert agency in trade policy issues, we also provide assistance to developing countries through trade-related development cooperation. One example is Open Trade Gate Sweden, a one-stop information centre assisting exporters from developing countries in their trade with Sweden and the EU.

Our analysis and reports aim to increase the knowledge on the importance of trade for the international economy and for the global sustainable development. Publications issued by the National Board of Trade only reflects the views of the Board.

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