



Aktuelle politische  
Debattenbeiträge



# IW-Policy Paper 8/21

## Trade Club for Climate

A Climate Approach to Revive Multilateralism  
Hubertus Bardt / Galina Kolev

Cologne, 26 April 2021

**Contents**

<b>Summary</b>	<b>3</b>
<b>1 Introduction</b>	<b>4</b>
<b>2 Trade-climate nexus</b>	<b>5</b>
<b>3 Trade policy measures to tackle climate challenges</b>	<b>8</b>
<b>4 Trade policy approach for climate protection</b>	<b>11</b>
<b>References</b>	<b>15</b>
<b>List of Figures</b>	<b>18</b>



**JEL Classification:**

F13 – Trade Policy, International Trade Organisations

F18 – Trade – Trade and Environment

Q54 – Environmental Economics – Climate

## Summary

The adoption of the Paris Agreement in December 2015 calls for concerted efforts by the international community to restrain the increase in global average temperature to well below 2°C. Trade policy has the potential to contribute substantially to curbing climate change. However, the global trade system is suffering the deepest crisis in the history of the World Trade Organization (WTO). To revive multilateralism, it is crucial to pursue a positive approach based on the commitment to a common target like climate protection and reinforced by the urgency of that target. A Trade Club for Climate (TCC) or a Sector/Industry Climate Club (SICC) are alternative ways to address both the climate crisis and the crisis of the global trading system at the same time. They should be exclusive, appealing and based on the experience of the GATT and WTO negotiations. Starting the negotiations with a smaller number of countries to achieve a large progress is more feasible than involving all current WTO member states right from the beginning. The TCC could draw on the potential of trade policy to contribute to climate protection and should be an attempt to liberalise trade with environmental and climate goods and services. A SICC could focus on the main producing countries of specific industries, which would make negotiations about minimum levels of carbon prices more feasible. The discussion on the trade-climate nexus shows that there are several measures that can be taken to make trade policy work for climate. Eliminating tariffs and reducing non-tariff barriers on goods for climate protection, product labelling, green procurement and carbon border adjustment are only a few of them. The change of political power in the USA, the recent trade policy review in the EU and the increasing commitment of many other countries worldwide show that there cannot be a better time to initiate a TCC or SICCs for specific industries and launch negotiations.

## 1 Introduction

The adoption of the Paris Agreement in December 2015 marks a turning point in global environmental and climate policy. Many countries worldwide have their own long-term goals in terms of CO<sub>2</sub> emissions reduction but in the end the concerted efforts of the international community are needed to restrain the increase in global average temperature to well below 2°C since the aggregated individual intended nationally determined contributions are not sufficient (Höhne et al., 2017).

Whereas emissions in developed countries have stabilised since the 1990s, emissions in developing countries have been increasing rapidly. The widespread belief is that international trade has contributed to this development, since it undermines national emission reduction targets (Kanemoto et al., 2014) and therefore makes negative contributions to achieving global climate policy targets. However, trade can also support climate protection since it changes the production and consumption patterns of economies and makes climate and environment-protection technology available all over the world. It is, however, of crucial importance to set the right incentives by trade policy to make trade work for climate.

Currently, the global trading system is suffering the deepest crisis since the existence of the World Trade Organization (WTO). The need for reform and the lacking progress in the process of negotiations undermine the credibility of the global trade order, increase uncertainty for businesses and question the very fundament of international specialisation. A total of more than 20 thousand discriminatory interventions have been introduced worldwide since November 2008 (GTA, 2021). Furthermore, the current pandemic has revealed the vulnerability of international trade and global value chains. It has also stressed the necessity of a rules-based reliable global exchange of goods, services and capital to secure the access to essential medical devices, personal protection goods and pharmaceutical products around the world. It underscored the urgent need for stability of the global trade system.

The change of political power in the USA raised a lot of hope among trade policy makers around the globe. President Biden is willing to cooperate and has appealed to the allies to develop common approaches to common problems – especially in the trade policy response to the systemic competition with China. However, he will not bury the legacy of his predecessor. “America first” has been further developed to “Made in all of America”. Although President Biden recognises the advantages of an open and free international trade, the focus of trade policy and its highest priorities remain domestically oriented. The course for the years until the next election in 2024 is scratched in the agenda published on March 31, 2021 (USTR, 2021). Starting with the economic recovery after the pandemic as the most urgent and highest priority, President Biden puts US workers in the centre of trade policy. Just a few lines below these top priorities, though, he committed the Biden Administration to pursue action at home and abroad to put the world on a sustainable environment and climate path. Climate-related trade policy action is put onto the list of priorities well before the topic of addressing China’s coercive and unfair economic trade practices and the reform of the WTO substantive rules and procedures to address the challenges facing the global trading system.

The order of priorities in the US trade policy agenda for the next three and a half years may appear surprising given the urgent need for action both on China-related challenges and the future of the WTO. It is less surprising, however, considering the urgency of the global climate crisis as well as the potential of trade policy to contribute to climate protection. The priorities in the US trade policy agenda were again underlined by the fact that the USA demonstrated leadership and dedicated the first international summit organised by the new US-administration on April 22-23, 2021 to the global challenge of climate change. The present analysis intends to shed light on several aspects surrounding the climate-trade nexus and to give an overview of possible trade policy approaches to achieve climate-related objectives. Although the relationship between international trade and climate change is not clear-cut (see Section 2), there is a range of trade policy options to pursue climate protection (see Section 3). Concentrating the efforts on climate-related measures should be considered as a feasible way to give multilateralism a positive impetus and move it out of the current deadlock, as outlined in Section 4.

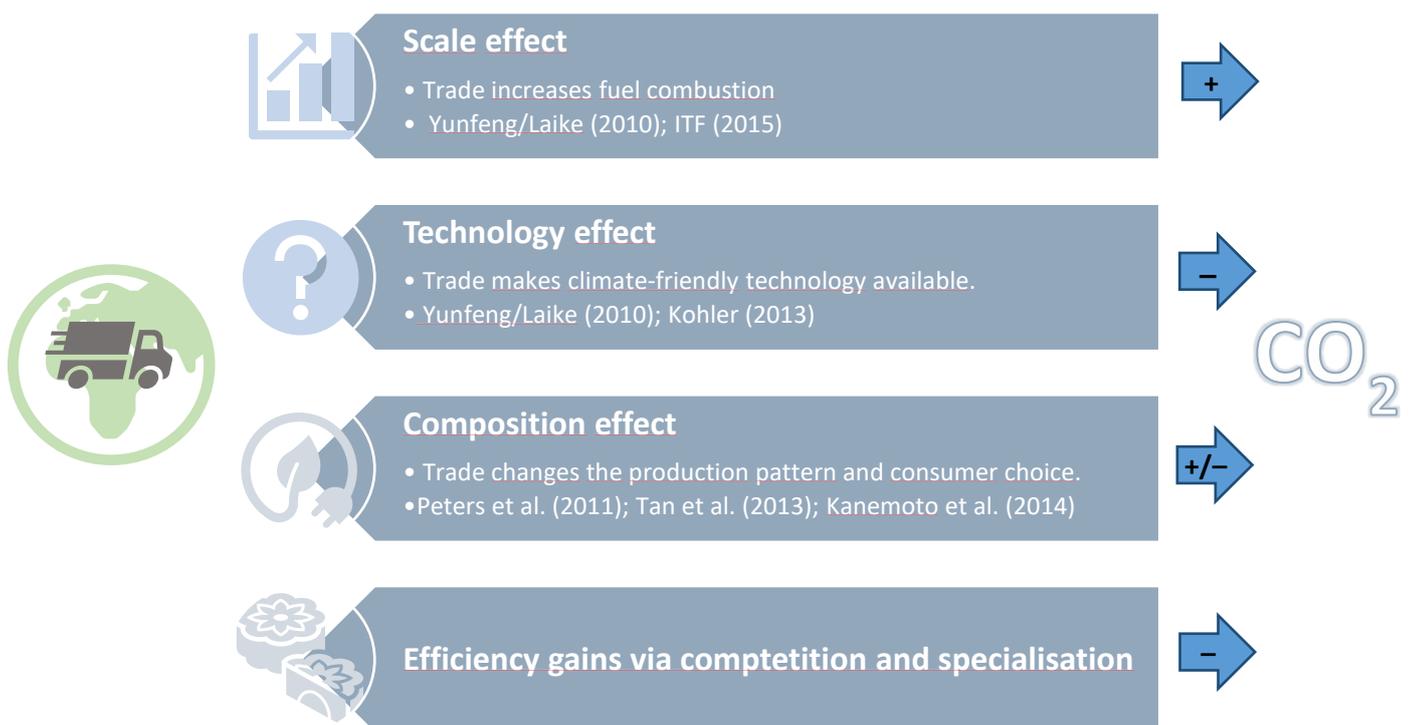
## 2 Trade-climate nexus

Since the beginning of the 1950s, the volume of global goods exports has increased more than 300 times. Lower transport and telecommunication costs, free capital flows and trade liberalisation have enabled economies to specialise according to their comparative advantages and to use economies of scale to increase welfare. For many countries worldwide the integration in global trade structures has created valuable impulses to economic growth and has contributed substantially to relieving hundreds of millions of people from absolute poverty. Whereas in 1950 almost two third of the world population lived in extreme poverty defined as having less than 1.90 US dollar per day (in PPP standards), the share has decreased to below 10% in recent years. At the same time, however, CO<sub>2</sub> emissions rose from around 6 billion tons in 1950 to more than 36 billion tons in 2019. Although it is barely possible to unambiguously calculate the carbon footprint of international trade, there are attempts to measure particular aspects of the relationship. The International Transport Forum (ITF) estimated, for instance, that international trade-related freight transport accounts for almost 30% of all transport-related CO<sub>2</sub> emissions from fuel combustion and therefore for more than 7% of global CO<sub>2</sub> emissions (ITF, 2015). The trade-climate nexus goes, though, far beyond the pure transport-related effects.

In the literature, three potential effects are often considered which relate carbon emissions to trade: the scale effect, the composition effect and the technology effect (Figure 2-1; see e.g. Kolev, 2021). More trade leads to more carbon emissions via the scale effect as estimated by the ITF (2015) since it makes more international freight necessary. Furthermore, higher economic growth is associated with higher energy consumption. However, economic growth also fosters investment in modern and more efficient technology – especially in the context of international competition. Increasing openness fosters further the availability of climate-friendly technology especially in developing countries and can thus contribute to reducing global emissions. Global trade in environmental goods like solar panels, gas and wind turbines or soot removers is estimated at around 1.3 trillion US dollar in 2016 and increased by an average annual growth of 7.5% between 2003 and 2016 (OECD, 2019). Almost 35% of exported environmental goods are related to renewable energy plants. China alone exported renewable

energy products worth more than 100 billion US dollar in 2016. Products from the area of wastewater management and portable water treatment account for further 19%, followed by products related to environmental monitoring, analysis and assessment equipment with 11%. Overall, in 2016 China was the biggest exporter of environmental goods and services, followed by Germany, the USA, Japan and Korea. China is also the second biggest importer of those products, after the USA and before Germany, Mexico and the United Kingdom. Although tariffs on imports of environmental goods are below average and have declined since 2003, they still amount to 4.1% in non-OECD countries, more than five times higher than in OECD countries. Under the presumption that many non-OECD countries do not produce large amounts of environmental goods and therefore rely on imports from OECD countries, these numbers indicate that there is a substantial potential to enhance environmental and climate protection by liberalising trade of environmental goods and services.

**Figure 2-1: The impact of international trade on CO<sub>2</sub> emissions**



Source: Based on Kolev (2021)

The composition effect of international trade on global carbon emissions can be both positive and negative, depending on how trade openness changes specialisation patterns and consumer preferences:

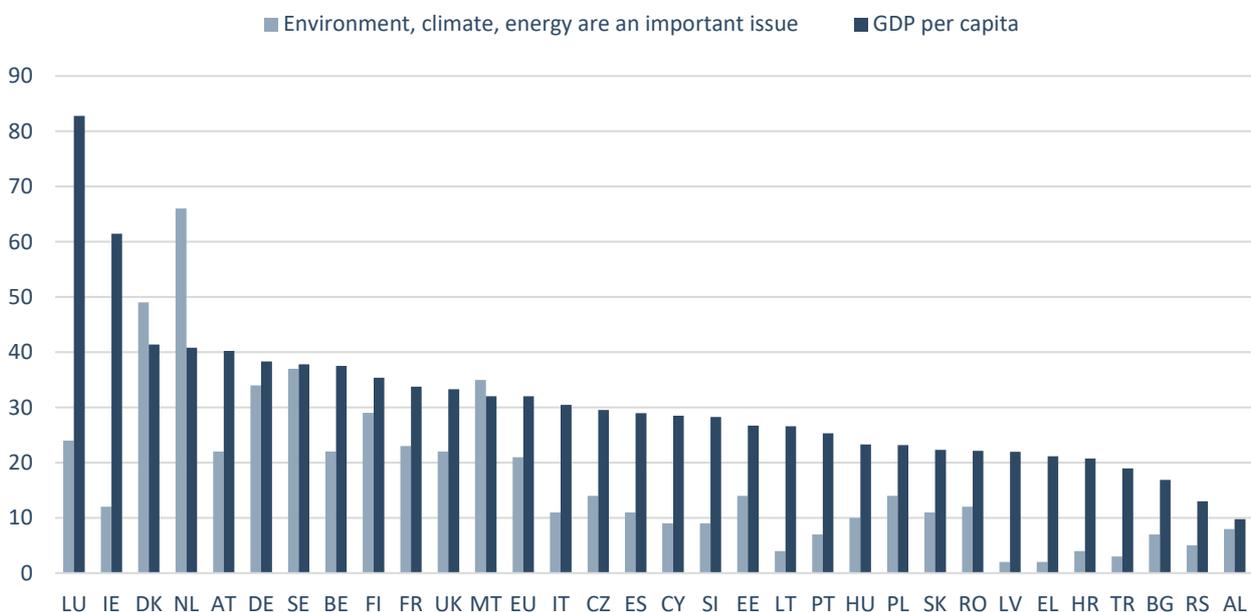
- On the one hand, the pattern of domestic production and trade can shift to avoid climate policy constraints in the home country, leading to carbon leakage. Data provided by the OECD show that in 2015 CO<sub>2</sub> emissions embodied in domestic final demand were by about 1.6 gigatons higher in OECD countries than CO<sub>2</sub> emissions in production. The contrary is true for non-OECD countries indicating that international trade is associated with net transfer of

CO2 emissions. The net transfer remained stable for the last years up to 2015 and decreased since 2005.

- On the other hand, trade can reduce global emissions if participating countries specialise according to their absolute or comparative advantages measured in terms of carbon intensity. Tan et al. (2013) investigate for instance CO2 embodiment in China-Australia trade and find out that the rapid growth of exports of carbon-intensive goods from Australia to China has contributed to reducing global carbon emissions since carbon intensity of the production of those goods is much lower in Australia than in China. A similar result can be found when evaluating the EU-Korea Free Trade Agreement (FTA) conducted by Civic Consulting and the ifo Institute (2018). The authors stress the complexity of measurement and conclude that the agreement may have led to a net reduction of global CO2 emissions by 4.1 million tons CO2 due to trade diversion in favour of EU and Korean firms at the expense of more polluting producers in China (-2.8 million tons CO2) and the USA (-1.3 million tons CO2). A theoretical model based on a Ricardian framework for the potential of trade to reduce CO2 emissions via the composition effect can be found in Kolev (2020).

**Figure 2-2: Perception of climate-related challenges and income per capita**

Share of respondents, who have responded “The environment, climate and energy issues” to the question “What do you think are the most important issues facing (OUR COUNTRY) at the moment?” in autumn 2019 in per cent; GDP per capita in purchasing power standards, current prices, in thousand euro



Sources: European Commission (2020); Eurostat

The composition effect refers not only to the production side of the economy but also to the consumption pattern. The growth-enhancing effect of integration in global trade structures raises global incomes and can, thus, contribute to a shift of consumer preferences towards more environmental and climate-friendly goods and services. Figure 2-2 shows the awareness of

climate-related issues in the context of other challenges for the EU member states and two accession countries as well as their per capita GDP in purchasing power standards. Figure 2-2 illustrates how climate-related issues gain relevance with increasing income, as economic issues like economic stability or low unemployment are already taken as a given by and large. It is a well-documented observation that globalisation and international trade in particular have contributed to economic growth and to a higher income level worldwide and thus to more awareness for climate-related challenges. The relationship is also subject to many empirical analyses investigating the so-called Environmental Kuznets Curve linking income level to environmental indicators (see e.g. Dinda, 2004).

Beyond the conventional channels connecting international trade to CO<sub>2</sub> emissions there is a further effect resulting from efficiency gains in the course of globalisation. Increasing openness is an important factor which intensifies competition, encourages innovation and thus creates pressure and incentives for efficiency gains. Furthermore, efficiency gains result from international specialisation as well. Both effects are expected to lower CO<sub>2</sub> emissions and thus have a positive impact on climate. Although this channel is straightforward since efficiency gains are associated with lower resource deployment, it has not gained much attention in the literature thus far and is rather captured by the composition and the technology effect described above.

### 3 Trade policy measures to tackle climate challenges

The previous section indicated both positive and negative potential effects of international trade on climate. It is, therefore, crucial to set the appropriate policy framework in order to enhance the positive effects while constraining the negative effects. The policy framework should offer more incentives to specialise according to comparative advantages in terms of CO<sub>2</sub> efficiency. This would be automatically the case, if total social costs of the traded products were considered instead of the private production costs. In the current arrangement of trade policy measures Shapiro sees implicit subsidises for CO<sub>2</sub> emissions in internationally traded goods and a contribution to climate change instead of supporting climate protection. He shows that import tariffs and non-tariff barriers are systematically higher for products with lower CO<sub>2</sub> intensity. Furthermore, if countries applied similar trade policies to products both with lower and higher CO<sub>2</sub> intensity, global CO<sub>2</sub> emissions would decrease without significant changes in global real income due to increased specialisation according to climate. Shapiro explains his results by stressing the greater protection of downstream industries, which are relatively clean. This outcome corresponds to the results of the theoretical reinterpretation of the classical Ricardian model presented in Kolev (2020). Therefore, it is a matter of trade policy arrangements to allow trade to work for climate protection.

Specialisation, international trade and globalisation are complex processes, encompassing many different aspects. As Frankel (2009) stresses, it would be surprising for all of them to be favourable or unfavourable to the environment at any time. It appears less likely that the environmental trade policy bias described by Shapiro is removed by renegotiating MFN (most favoured nations) tariff rates. There are, though, other trade policy measures that can be implemented to

support environmental- and climate-friendly trade, over and beyond implementing CO<sub>2</sub> emission targets at the individual country level:

- First, trade liberalisation in the field of environmental and climate protection goods should be brought forward. This subject is not new to trade circles. The 2001 Doha Ministerial Declaration contains the commitment to negotiate “the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services” (WTO, 2001). There are several initiatives, which address this issue, starting with the negotiations on an Environmental Goods Agreement (EGA) at the WTO. The negotiations were launched in 2012 and are conducted by 18 participants, representing 46 WTO member states (including the EU, China and the USA), with the aim of reducing tariffs on products relevant to environmental and climate protection, e.g. for the generation of clean and renewable energies, or to improve energy and resource efficiency (WTO, 2020). The progress of negotiations is, however, far too slow for addressing such a significant challenge. A major problem is the absence of developing countries at the negotiation table except for China and Costa Rica. As stressed in the previous section, tariffs on environmental goods are especially high in non-OECD countries. Thus, such an agreement has the potential to unfold significant climate and environment protection effects via the technology channel especially by eliminating tariffs on those goods in developing countries.
- Second, countries should consider constraining fuel subsidies, which amounted to more than 5 trillion US dollars (6.5% of global GDP) in 2017 according to projections by the International Monetary Fund (Coady et al., 2019). Most of the subsidies are accounted for by developing and emerging economies and secure income and welfare in those countries. Therefore, it is of crucial importance to develop accompanying policy measures like international transfers to compensate for the existing support via fuel subsidies. The OECD showed though that budgetary transfers, tax breaks and spending programmes linked to the production and use of coal, oil, gas and other petroleum products increased in 44 OECD and G20 countries by 10% year-on-year to 178 billion US dollars in 2019 (OECD, 2020). Such policies contradict the commitment of many countries to curb climate change and improve environment. The overall support for the production of fossil fuel rose by 38% in 2019. However, a precise definition of subsidies for fossil energy or carbon intensive processes is necessary. In some countries, energy intensive industries pay lower duties on energy consumptions. As these exceptions have been necessary in order to increase energy taxes for other consumers and levies are not lower than before or than in other countries, the difference in taxation cannot be defined as subsidies that could be simply eliminated. However, global coordination of carbon pricing should also address the existing exemptions that are being used to unilaterally ensure a level playing field.
- Third, subsidies should instead be increasingly used for targeted non-discriminating activities to support climate protection, like renewable energy and other climate-friendly technologies. In 2017, only one fifth of total energy sector subsidies were attributed to renewable power generation technologies and about 6% were accounted for by the biofuel sector (Taylor, 2020). Fossil fuels accounted for 70% of the total.

- Fourth, labelling of climate-friendly products should be extended to create incentives for producers and enable them to charge a mark-up for green technology and inputs. Analyses show that consumers are willing to pay a price premium for a carbon label in advanced economies like Germany, France, Italy, Spain, UK and Norway (Feucht/Zander, 2017). A harmonised approach for a common label could not only facilitate consumer choice independent of one particular country. It can also prevent abuse of climate-friendly labels for protectionist purposes. A broader information campaign is needed in addition to improve the understanding of climate-friendly actions and the carbon footprint of consumption habits. A credible labelling, however, has to be based on transparent measurement and verification of emissions in all relevant countries.
- Fifth, non-discriminating binding green procurement should be implemented to boost demand for climate-friendly goods and services. Currently, green public procurement is voluntary in the EU. Increasing commitment to procure climate and environment-friendly products does not only set a good example. It also can be considered a driver of innovation. At the same time, the criteria must be transparent, open for competition and limited to very fundamental criteria. Adding too many criteria to procurement processes would reduce or turn off competition and lead to worse tender results for public authorities.
- Sixth, the different approaches to sustainable development chapters in free trade and investment agreements (the US and the EU approach, which differ largely, especially as regards enforceability) should be carefully evaluated to identify and implement the most effective measures. International environmental agreements can be an effective means to reduce trade of hazardous substances (Núñez-Rocha/Martínez-Zarzoso, 2019). Trade and investment agreements with environmental provisions can support these efforts.
- Finally, Carbon Border Adjustment Mechanism (CBAM) is being discussed in the EU, USA and Canada to create a level playing field in countries with implicit or explicit CO<sub>2</sub> prices instead of exempting CO<sub>2</sub> intensive industries from paying for their emissions (Kolev et al., 2021). The European Commission has proposed the introduction of a CBAM as part of the EU Green Deal and the European Parliament adopted a resolution on a WTO-compatible CBAM in March 2021. The Parliament voted, though, for preserving the free allocation of CO<sub>2</sub> certificates which consist of a major obstacle for the WTO-conformity of the initiative as they can be considered a discriminatory subsidy to domestic supplies when foreign producers start to pay a carbon tariff or have to participate in the EU Emissions Trading System (EU-ETS) in another way. Lacking experience at the WTO level with such measures calls for a legal interpretation of the CBAM, which could take years. It is crucial to motivate the introduction of CBAM with climate action since it should be considered an exemption for the purpose of conservation of exhaustible natural resources (GATT, Art. XXIV g). To demonstrate the expected climate effect remains a challenging task, especially as there is still no international consensus on the measurement of such effects. While at first glance, carbon border mechanisms seem to be an adequate instrument to introduce imports into the emission trading scheme, there are fundamental questions associated with this instrument. Systematically, it addresses product-based emissions and not the emission itself, which contradicts the established international greenhouse gas accounting. Furthermore, verification of emissions in

the value chain has to be implemented internationally if a fair and non-discriminating pricing of imported emissions should be introduced. Otherwise, countries exporting to Europe could declare that emissions of exporting companies come from carbon free energy sources. Finally, unilateral carbon border instruments can be seen as protectionist measures and trigger severe trade conflicts. When the EU tried to include international flights into the Emission Trading Scheme, the robust reactions of China including cancellations of existing commercial contracts stopped the initiative. The perception in many Asian-Pacific countries is that CBAM would be protectionist and unfair (KAS, 2021). Forcing China and other countries into the European carbon pricing regime through import prices may have severe trade conflicts as consequence (Wissenschaftlicher Beirat, 2021).

## 4 Trade policy approach for climate protection

The list of climate-related trade policy measures discussed thus far underlines the potential of trade policy to support climate protection. Although it is essential not to overload trade policy with the objectives of other policy fields in the sense of the Tinbergen rule, there are two reasons why trade policy should step up its commitment to climate protection. First, the urgency of the climate challenges makes it necessary to look for approaches in all policy areas to mitigate climate change. Furthermore, the strict Tinbergen rule applies to independent policy instruments and goals, which is clearly not the case for trade and climate policy as emphasised in Section 2. And second, as climate protection has developed to one of the main priorities in advanced and many emerging and developing economies, a climate-related approach can give an important impetus to the stagnant multilateral negotiations on trade. The slow-moving negotiations of the EGA have motivated a large number of countries around the world to seek plurilateral solutions to enable and promote the contribution of trade policy to climate protection. One of these initiatives is the informal FAST group (Friends Advancing Sustainable Trade) whose objective is to support and complement the work of the Committee on Trade and Environment within the WTO. Similar objectives are pursued by the TESSD (Trade and Environment Structured Discussions) group among WTO member states. More than 50 WTO members (including the EU) participated in the meeting in November 2020 during the WTO's Trade and Environment Week and discussed potential measures to enhance the contribution of trade policy to climate protection.

Furthermore, the initiative of New Zealand, Costa Rica, Fiji, Iceland and Norway (Agreement on Climate Change, Trade and Sustainability – ACCTS) launched in September 2019 represents a plurilateral approach to climate-related trade policy. The envisaged scope is threefold (MFAT, 2021):

- removal of tariffs on environmental goods as well as new and binding commitments for environmental services with the objective to make those products cheaper and accelerate access and uptake;
- disciplines to eliminate harmful fossil fuel subsidies with the objective to mitigate the harmful and socially regressive effect of the subsidies;

- development of guidelines to inform the development and implementation of voluntary eco-labelling programmes and associated mechanisms to encourage their promotion and application, the objective being to increase consumers' understanding for the climate impact of the products they buy.

Although multilateral action remains the priority, the participating countries consider ACCTS a pathfinder and template for action (MFAT, 2021). It has the potential to demonstrate in practical terms how trade policy can support climate and environmental objectives and generate momentum towards a multilateral approach.

All these initiatives indicate the willingness and commitment of many countries worldwide to a climate-friendly trade policy. The trade policy approach to climate-related challenges has the potential to lay the foundation for the Climate Club proposed by the Nobel Prize laureate William Nordhaus to overcome free-riding in international climate policy (Nordhaus, 2015). Nordhaus lists the major conditions for a successful club as follows:

1. A public-good-type resource that can be shared,
2. cooperative arrangement beneficial for each member,
3. excludability of non-members,
4. stability of membership.

A Trade Club for Climate (TCC) based on these criteria is feasible as suggested by the following considerations. Unlike the Climate Club suggested by Nordhaus, TCC should have two pillars: Increasing trade with climate protection goods and aligning carbon pricing of the member state.

TCC should target other trade-related advantages and contributions to climate protection. Especially, the easy access to other countries' markets for climate protection goods and services as well as their climate-friendly technology at lower prices can make the membership attractive to countries on their way to climate neutrality. These advantages can be set up by eliminating tariffs and reducing non-tariff barriers to trade and even enhanced by opening public procurement based on climate-related criteria. The attractiveness of the club is especially high for countries involved in international trade of environment and climate-friendly products like China, the USA, the EU member states, Canada, Mexico, Japan, Korea and the UK (see Section 2). It can, though, go beyond tariffs and non-tariff barriers and address issues like eco-labelling or a common approach of CO<sub>2</sub> measurement as a necessary precondition for the introduction of a CBAM. Furthermore, it can also touch upon the issue of international projects for the compensation of CO<sub>2</sub> emissions or subsidies for the development of climate-friendly technology.

Although a TCC within the WTO and with the participation of all 164 member states would be the first-best option to enhance the positive effects of trade policy on climate, a smaller group

of like-minded countries would be a more promising approach to reach a higher degree of climate-friendly trade liberalisation. The group should be large enough to ensure the attractiveness of the TCC membership, and therefore larger than the current group of countries negotiating ACCTS. However, it should include only those countries which are willing to reach substantial progress in the negotiation process.

The main challenge of a TCC concerns its WTO conformity. The negotiating countries for the ACCTS plan to remove tariffs on environmental and climate goods on a MFN basis to fulfil their WTO obligations. Opening domestic markets for environmental and climate goods for all WTO member states can be a big progress also in a broader number of countries. It is, though, not consistent with the exclusivity of a TCC. There are four possible solutions for this challenge:

- The countries considering a membership of the TCC can renounce the explicit elimination of tariffs on environmental and climate goods. Since many of the countries already have or have been negotiating a Preferential Trade Agreement (PTA) and their tariff rates on those goods are already rather low, the potential for trade liberalisation via tariff reduction is not high. Instead, they can concentrate on other issues like non-tariff barriers, labelling, trade in services, green procurement, fossil fuel and other subsidies.
- The countries intending to negotiate a TCC can call for an exemption from the “substantially all the trade” rule for a WTO-conform PTA to include the elimination of tariffs on environmental and climate goods. Since this would require unanimity at WTO level, this is not very likely to happen.
- The participating countries can build TCC upon a conventional PTA and motivate it by the climate-focused approach. Although many of the potential countries have already a bilateral or plurilateral PTA, it is not very likely to reach a common understanding to conclude a PTA for a broader group of countries.
- The TCC can be considered an extension of the ACCTS to involve further climate-related trade policy measures and also other countries, especially the biggest CO<sub>2</sub> emitter China and the USA as well as the EU. The exclusiveness of the club can be ensured by measures in the field of green procurement, labelling or CO<sub>2</sub> measurement, whereas tariff elimination should be implemented on a MFN basis to stick to the WTO rules.

However, a Trade Carbon Club should also aim to establish a common carbon price or an international carbon price floor (Parry, 2021) within the club that could be accompanied by border adjustment measures. This would eliminate carbon leakage issues between countries within the club as long as members do not increase their carbon price level too far above the Club’s minimum price. Carbon border pricing would reduce obstacles to join the Trade Carbon Club for third countries that might not be in favour of carbon pricing but are interested in joining the Club and benefiting from the advantages of preferred trade with environmental goods. However, the Club must include a high share of the global economy to reduce the risks of retorsion measure. Implementing carbon duties to force non-members into the club should not be part of the concept.

The main challenge is to convince countries to agree on a joint carbon reduction target or at least a similar price level or lower bound for carbon emissions. Using trade policy instruments increases the risks of retorsion and escalating trade conflicts. Giving additional incentives for members through preferred conditions and tariff reduction for climate protection goods leads to another dilemma: It would probably be better for global greenhouse gas mitigation if these technologies were available worldwide without any tariffs. Thus, remaining tariffs for non-members of the club or countries without an adequate carbon pricing would be a risk for quick global reduction of emissions.

An alternative could be a Sector/Industry Climate Club (SICC), which might be more feasible as a next step in international coordination. The idea of a SICC is that the countries that host the main producers of certain products agree on similar climate related conditions for these companies. These countries could for example agree on a common price level for e.g. production of copper. As a consequence, higher carbon prices could be passed through to consumers that would have to pay higher product prices as there would not be any suppliers from third countries without adequate pricing. Suppliers from countries outside the SICC with a very low market share would have to face border adjustments. As all major producers would be included, the risk of retorsion would be minimised. The chances to come to an agreement on SICC's can be higher as fewer countries are needed and the effect for each country is smaller as only a specific sector is affected. Prototypes should be developed that address industries where all relevant countries including China have some form of carbon regulation or direct/indirect carbon pricing implemented. The Montreal Protocol on Substances that Deplete the Ozone Layer was successful as the number of countries was smaller and could be a good example for SICC's.

Coming back to the trade policy priorities set by the Biden Administration to which the introduction of the present paper referred, there cannot be a better time to build a founding group of countries and launch negotiations on a TCC or SICC. The US-trade agenda explicitly includes the "negotiation and implementation of strong environmental standards that are also critical to a sustainable climate pathway" (USTR, 2021). Fishery subsidies and environmental practices are mentioned in the first place. Leveraging trade relationships to contribute to climate protection is considered as a further possible step.

The trade policy review and the commitment to an open, sustainable and assertive trade policy shows the willingness of the EU to go in the same direction. The current conflicting situation within the WTO and especially the triad between the three centres of gravity of global economic, innovation and trade power stress the need for a positive approach to revive multilateralism. This positive approach can only be based on a common commitment and can be substantially reinforced by the severity of the climate crisis. Currently, climate-related trade measures like the CBAM planned by the EU threaten to develop into the next point of contention. A TCC and SICC's should prevent from such development and can therefore be considered as one (if not the only) way to address both the climate crisis and the crisis of the global trade system.

## References

- Civic Consulting / ifo Institute, 2018, Evaluation of the Implementation of the Free Trade Agreement between the EU and its Member States and the Republic of Korea, Report for the European Commission, [https://trade.ec.europa.eu/doclib/docs/2019/march/tradoc\\_157716.pdf](https://trade.ec.europa.eu/doclib/docs/2019/march/tradoc_157716.pdf) [2021-04-17]
- Coady, David / Parry, Ian / Le, Nghia-Piotr / Shang, Baoping, 2019, Global Fossil Fuel Subsidies Remain Large: An Update Based on Country-Level Estimates, IMF Working Paper, No. 19/89, Washington
- Dinda, Sumyananda, 2004, Environmental Kuznets Curve Hypothesis: A Survey, in: Ecological Economics, Vol. 48, No. 4, pp. 431–455
- European Commission, 2020, Standard Eurobarometer 92, Autumn 2019, Brussels
- Feucht, Yvonne / Zander, Katrin, 2017, Consumers' Willingness to Pay for Climate-Friendly food in European Countries, Proceedings in System Dynamics and Innovation in Food Networks 2017, <http://centmapress.ilb.uni-bonn.de/ojs/index.php/proceedings/article/view/1738> [22.4.21]
- Frankel, Jeffrey A., 2009, Environmental Effects of International Trade, HKS Faculty Research Working Paper Series, Nr. RWP09-006, Cambridge, MA
- GTA – Global Trade Alert, 2021, All state interventions implemented worldwide since the start of the global financial crisis, <https://www.globaltradealert.org/> [2021-04-17]
- Höhne, Niklas et al., 2017, The Paris Agreement: resolving the inconsistency between global goals and national contributions, in: Climate Policy, Vol. 17, Nr. 1, pp. 16–32
- ITF – International Transport Forum, 2015, ITF Transport Outlook 2015, Paris
- Kanemoto, K. / Moran, D. / Lenzen, M. / Geschke, A., 2014, International trade undermines national emission reduction targets: New evidence from air pollution, in: Global Environmental Change, Vol. 24, No. 1, pp. 52–59
- KAS – Konrad Adenauer-Stiftung, 2021, Perception of the Planned EU Carbon Border Adjustment Mechanism in Asia Pacific — An Expert Survey, Hongkong
- Kohler, Marcel, 2013, CO2 emissions, energy consumption, income and foreign trade: A South African perspective, in: Energy Policy, Vol. 63, No. 12, pp. 1042–1050
- Kolev, Galina, 2020, Emission Targets, Comparative Advantage and Trade: A New Reading of David Ricardo, Beiträge zur Jahrestagung des Vereins für Socialpolitik 2020, <https://www.econstor.eu/bitstream/10419/224646/1/vfs-2020-pid-40520.pdf> [2021-04-17]

Kolev, Galina, 2021, Freihandel und Klimaschutz, in: Konrad-Adenauer-Stiftung (ed.), Ein Plädoyer für den Freihandel, pp. 38–49

Kolev, Galina / Kube, Roland / Schaefer, Thilo / Stolle, Leon, 2021, Carbon Border Adjustment Mechanism. Motivation, Ausgestaltung und wirtschaftliche Implikationen eines CO<sub>2</sub>-Grenzausgleichs in der EU, IW-Policy Paper, Nr. 6, [https://www.iwkoeln.de/fileadmin/user\\_upload/Studien/policy\\_papers/PDF/2021/IW-Policy-Paper\\_2021\\_Carbon-Border-Adjustment.pdf](https://www.iwkoeln.de/fileadmin/user_upload/Studien/policy_papers/PDF/2021/IW-Policy-Paper_2021_Carbon-Border-Adjustment.pdf) [2021-04-18]

MFAT – New Zealand Ministry of Foreign Affairs and Trade, 2021, Agreement on Climate Change, Trade and Sustainability (ACCTS) negotiations, <https://www.mfat.govt.nz/en/trade/free-trade-agreements/trade-and-climate/agreement-on-climate-change-trade-and-sustainability-accts-negotiations/> [2021-04-18]

Nordhaus, William, 2015, Climate Clubs: Overcoming Free-Riding in International Climate Policy, in: American Economic Review, Vol. 105, No. 4, pp. 1339–1370

Núñez-Rocha, Thaís / Martínez-Zarzoso, Inmaculada, 2019, Are international environmental policies effective? The case of the Rotterdam and the Stockholm Conventions, in: Economic Modelling, Vol. 81(C), pp. 480–502

OECD – Organisation for Economic Co-operation and Development, 2019, Report on a set of policy indicators on trade and environment prepared by the Joint Working Party on Trade and Environment, [https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=COM/TAD/ENV/JWPTE\(2018\)2/FINAL&docLanguage=En](https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=COM/TAD/ENV/JWPTE(2018)2/FINAL&docLanguage=En) [2021-04-17]

OECD, 2020, Government should use Covid-19 recovery efforts as an opportunity to phase out support for fossil fuels, say OECD and IEA, <https://www.oecd.org/environment/governments-should-use-covid-19-recovery-efforts-as-an-opportunity-to-phase-out-support-for-fossil-fuels-say-oecd-and-iea.htm> [2021-04-17]

Parry, Ian, 2021, Implementing the United States’ Domestic and International Climate Mitigation Goals: A Supportive Fiscal Policy Approach, IMF Working Paper, No. WP/21/57, Washington, D.C.

Peters, Glen P. / Minx, Jan C. / Weber, Christopher L. / Edenhofer, Ottmar, 2011, Growth in emission transfers via international trade from 1990 to 2008, in: Proceedings of the National Academy of Sciences, Vol. 108, No. 21, pp. 8903–8908

Shapiro, Joseph S., 2021, The Environmental Bias of Trade Policy, in: The Quarterly Journal of Economics, Vol. 136, No. 2, pp. 831–886

Tan, Hao / Sun, Aijun / Lau, Henry, 2013, CO<sub>2</sub> embodiment in China-Australia trade: The drivers and implications, in: Energy Policy, Vol. 61, No. 10, pp. 1212–1220

Taylor, Michale, 2020, Energy Subsidies. Evolution in the Global Energy Transformation to 2050, IRENA Staff Technical Paper, [https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Apr/IRENA\\_Energy\\_subsidies\\_2020.pdf](https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Apr/IRENA_Energy_subsidies_2020.pdf) [2021-04-17]

USTR – United States Trade Representative, 2021, 2021 Trade Policy Agenda and 2020 Annual Report of the President of the United States on the Trade Agreements Program, <https://ustr.gov/sites/default/files/files/reports/2021/2021%20Trade%20Agenda/Online%20PDF%202021%20Trade%20Policy%20Agenda%20and%202020%20Annual%20Report.pdf> [2021-04-17]

Wissenschaftlicher Beirat – Wissenschaftlicher Beirat beim Bundesministerium für Wirtschaft und Energie, 2021, Ein CO<sub>2</sub>-Grenzausgleich als Baustein eines Klimaclubs, Berlin

WTO – World Trade Organization, 2001, Doha WTO Ministerial 2001: Ministerial Declaration, 14 November, [https://www.wto.org/english/thewto\\_e/minist\\_e/min01\\_e/mindecl\\_e.htm](https://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm) [2021-04-18]

WTO, 2020, Environmental Goods Agreement, [https://www.wto.org/english/tratop\\_e/envir\\_e/ega\\_e.htm](https://www.wto.org/english/tratop_e/envir_e/ega_e.htm) [2020-11-08]

Yunfeng, Yan / Laike, Yang, 2010, China's foreign trade and climate change: A case study of CO<sub>2</sub> emissions, in: Energy Policy, Vol. 38, No. 1, pp. 350–356

## List of Figures

Figure 2-1: The impact of international trade on CO2 emissions .....	6
Figure 2-2: Perception of climate-related challenges and income per capita .....	7