KOMMERSKOLLEGIUM
NATIONAL BOARD OF TRADE SWEDEN

Border Carbon Adjustments

An analysis of trade related aspects and the way forward

2020

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National Board of Trade, July 2020. ISBN:978-91-88201-67-6

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National Board of Trade Sweden

Summary

In the European Green Deal, the European Commission announced its intention to present a proposal for a *Carbon Border Adjustment Mechanism* (in this report, BCA). BCA is a mechanism to counteract the risk of carbon leakage by setting a price for greenhouse gas emissions (GHG-emissions) on imports of certain goods from outside the EU.

The purpose of this report is to analyse trade-related aspects of BCA and assess possibilities for introduction of a BCA mechanism by the EU. The analysis shows that it is fully possible to implement a BCA in accordance with the World Trade Organization's (WTO) legal framework, in a way which creates incentives for reducing emissions while not resulting in excessive transaction costs for trade. Introduction of such a system, however, implies a number of practical, economic, legal, and political challenges. In order to address these challenges, this report puts forward a number of recommendations for creating a BCA that is likely to comply with WTO rules, is practically feasible, and has the greatest possible impact on emission reductions and the lowest possible impact on trade.

As the Paris Agreement empowers each country to determine its own level of climate ambitions, the costs associated with emission reductions for companies and countries may differ considerably. This can result in carbon leakage. The EU, which has one of the most ambitious climate goals in the world, may be particularly affected by this.

The Commission describes BCA as a key to on the one hand, avoiding carbon leakage, and on the other hand, a means of ensuring that companies within the EU can compete under fair conditions. The President of the Commission has clearly signalled that such a BCA should be designed so that it is fully compliant with the regulatory framework of the WTO.

The basic principle of a BCA is that imported products will carry the same cost of GHG emissions as those produced by domestic

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manufacturers. A BCA has three main advantages. Firstly, it allows the EU to introduce more efficient carbon pricing, for example by phasing out the free allocation of allowances and subsidies to fossil fuels for the sectors covered, without risking carbon leakage. Secondly, third country GHG emissions are priced to the extent the products end up in the EU, which may create incentives for third country actors to reduce their emissions. Thirdly, the carbon pricing leads to an increase in the price of emission-heavy products, which in turn reduces the consumption of these products. Overall, this may lead to improved conditions for the EU and Sweden to achieve their respective climate goals in an efficient way, as well as enable the EU and Sweden to do their part in achieving the objectives of the Paris Agreement.

However, a BCA-mechanism may also have several disadvantages. Firstly, other countries may perceive the instrument as a protectionist measure, which in a worst-case scenario may lead to trade conflicts. Secondly, the introduction of a BCA may lead to an increased administrative burden for companies that export to the EU.

The instrument may also have a number of consequences for the terms of trade for European businesses. Actors that produce products covered by a BCA may potentially become more competitive on the internal market whereas the downstream actors who use these products may become less competitive, both on the internal market and on the export markets. The total trade effects depend, among other things, on whether or not products exported from the EU are excluded from carbon pricing, for example through export rebates. The specific impact that a BCA may have on trade patterns must be examined further.

All in all, a well-designed BCA is often, according to economic theory and modelling, regarded as the most effective unilateral tool for managing carbon leakage. However, the efficiency of a BCA to a large extent depends on how the instrument is designed and implemented. As a result, it is difficult to assess whether, in practice, a BCA would be a more efficient tool than the current system of free allocation or other possible solutions for preventing carbon leakage. Such an assessment is however outside the scope of this report.

From a legal perspective, the Board has made the assessment that it is fully possible to design a BCA in accordance with the legal framework of the WTO (in particular the GATT), but compliance with the WTO-frameworks depends on how the instrument is designed. There are three main legal alternatives for designing the BCA: *as a customs duty*, *a tax*, or *an internal regulation*. Considering that the BCA most probably

would be based on a requirement for importers to buy emission allowances, the most natural choice would be to recognise the BCA as an internal regulations. The application of one or the other alternative, is mainly of significance for the possibility of including export rebates.

Given the risk that trade partners may interpret the implementation of a BCA as a protectionist measure, which could lead to countermeasures and disputes, it would be desirable if BCA was designed to the greatest extent possible in accordance with GATT's substantive rules. However, a BCA designed to effectively reduce GHG emissions would probably require exemption from the non-discrimination principles by Article XX in GATT.

Provided that a BCA can be clearly justified with regard to the climate goals and is generally designed in accordance with the requirements of the environmental exception in Article XX(g) in GATT, the Board has come to the conclusion that it is fully possible to design a BCA in accordance with the regulatory framework of the WTO. In line with this assessment, the Board puts forward the following recommendations concerning the possible design and application of such a BCA.

Recommendations

The purpose of BCA must be to prevent carbon leakage

The main purpose of a BCA must be that the instrument shall contribute to reduced GHG emissions by preventing carbon leakage. Starting from this objective alone is a prerequisite for making it possible to justify a BCA by the exceptions set out in the WTO's regulatory framework.

The choice of products should be kept narrow

The choice of products covered by BCA should, at least initially, be kept narrow and the focus should be on products most at risk of carbon leakage, and those with simple value chains. Some of the products that match these criteria are steel, aluminium, and cement. The effects on actors further down the value chain should also be taken into consideration in order to avoid carbon leakage at this level. Exactly which products to include in order to achieve the greatest impact on emissions, while also ensuring that doing so is technically feasible and does not create downstream leakage, should be investigated further.

The focus should be on selected products regardless of origin

The BCA should be aimed at selected products regardless of origin and should not differentiate between countries based on their climate ambitions. However, the least developed countries should be exempted from the mechanism.

Emissions from the production process and from energy consumption should be included

The BCA should include both direct emissions from the production process (*scope 1*) and, if practically possible, indirect emissions from energy consumption, for example electricity (*scope 2*). This recommendation presupposes that the BCA covers products that have significant emissions in both of these scopes.

A benchmark value for the average emissions of the selected products should be developed

A benchmark value for emissions caused during productions, per unit of weight of the products in question, should be developed. If possible, uniform benchmarks should be determined for emissions from the production process while varying benchmarks are used for indirect emissions. This makes it possible to calculate the total emissions of the import relatively easily. To ensure that EU producers and importers face the same conditions, any free allocation that EU producers have received

shall be deducted from the assessed emissions of imported products. Also, any subsidies paid to EU producers that aim to cover increased costs of energy consumption should be removed.

The choice of benchmarks impacts the effect of a BCA. A relatively high benchmark, such as the global average emission of a product, would lead to greater emission reductions than a lower value that is, for example, based on the average emissions within the EU. The first would need to be justified by the exception clauses while the latter would be more compatible with the national treatment obligation. The choice of benchmarks will therefore be based on a trade-off between these two interests.

It should be possible to demonstrate if the emissions are lower than the benchmark

EU should allow importers to demonstrate whether the emissions associated with the production of imported products are lower than the set benchmark value. The calculation method for measuring the emissions should be in line with the calculation method in the EU ETS but should allow some flexibility for using international standards to keep the administrative costs down and to avoid discrimination.

The price per emission unit should be the same for producers inside and outside the EU

Emissions resulting from the production of products imported to the EU should be charged the same price per tonne as producers within the EU pay. The design of the system should, as far as possible, mimic the conditions that apply to domestic producers. For a model that is based on the obligation of importers to purchase specific allowances, the importers should, like domestic producers, be able to submit these on an annual basis.

It should be possible to deduct carbon dioxide fees that have already been paid outside the EU

Importers should have the opportunity to demonstrate whether the products have already been covered by a carbon pricing scheme in the country of production, and should be allowed to make deductions for it. To only allow deductions from direct carbon pricing, such as carbon taxes and emission trading systems, would be the simplest from a practical point of view. However, giving importers the opportunity to also deduce carbon costs from other types of climate policies, can be decisive for the assessment of compliance of a BCA with the GATT

exceptions. How to take other country's climate policies into account in the BCA is an important question that must be investigated further.

The free allocation should be phased out

The EU should phase out the free allocation of allowances when a BCA-mechanism is introduced. This should be done over a period of time sufficient for the industry to adapt to the new conditions. The deductions made for free allocation when calculating emissions of imported products should decrease as the free allocation is phased out. This is required to ensure competitive neutrality and for the system to be compliant with the WTO legal framework.

Potential export rebates must be further investigated

The Board has not taken any position on whether a deduction for emission costs associated with the production of exported products *may* or *should* be introduced in connection with the introduction of a BCA-mechanism. There are considerable legal uncertainties regarding the possibilities of introducing these. The possibility depends primarily on whether or not the border tax adjustment principles can be applied to a BCA-mechanism. At the same time, including export rebates could also risk undermining a justification of, perhaps not the whole, but at least parts of, the BCA in accordance with Article XX in GATT. Even if export rebates could be justified from a trade and competitiveness perspective, the climate effects of incorporating these are unclear. Therefore, deeper impact assessments are required on whether an export rebate could or should be included or if a BCA-mechanism should solely focus on imports. Such an analysis should include how the global GHG emissions and the competitiveness of export companies are affected by the various alternatives.

Revenues should be used to reduce administrative burden and for climate actions

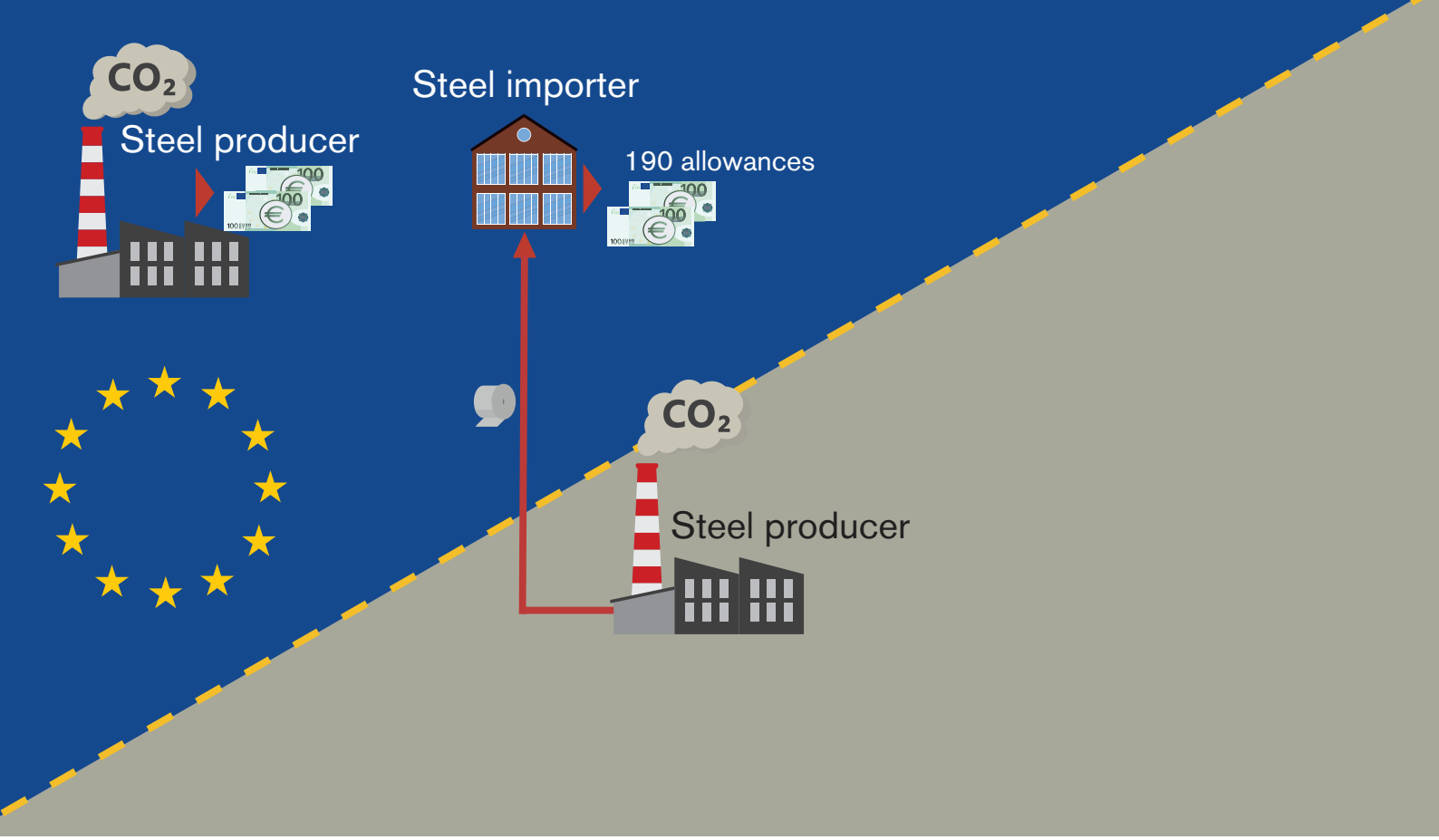
The revenues from a BCA-mechanism should be used to finance the development and administration of the system. To facilitate the application of the GATT exemption provisions, revenues can also be used to provide technical support to companies, especially in developing countries, who wish to measure, report, and verify their emissions. To emphasize that the BCA-mechanism has a clear environmental objective, the revenues could also be used for international climate measures (for example the Green Climate Fund).

The BCA must be designed to minimise the administrative burden related to imports

The EU has to ensure that the BCA is implemented without causing unnecessary administrative burden during the import of products. The system should be digital and based on automatic calculations that are predictable and transparent. The EU's customs authorities and authorities responsible for ETS should be involved in the design to ensure that the system can be designed without creating unnecessary transaction costs.

Implementation of BCA has to be carried out through a transparent process

The implementation of BCA can be interpreted as a protectionist measure by trading partners. To reduce the risk of conflicts, the introduction of BCA should be preceded by a transparent process within the WTO at the time of introduction and when making any changes to the system. Trade partners should be given the opportunity to comment on the design, measurement methods, and benchmark values. Such a process can contribute to make the design of a BCA less trade-restrictive, contribute to a more favourable assessment under Article XX in GATT, and counteract any potential trade conflicts.



A border carbon adjustment would most likely mean that the EU Emissions Trading System (ETS) is expanded to include emissions caused by imported goods. In order to describe the mechanism in a simplified way, we have chosen to;

- assume that the free emission allowances have been phased out
- only include scope 1 emissions
- only include imports
- use simple calculation examples. See chapter 6.7 for suggestions on exact calculation.

A steel producer in the EU must buy emission allowances. The number of allowances corresponds to the emissions caused during one year.

An EU steel importer must buy emission allowances corresponding to the emissions caused by the exporting producer in the country outside of the EU. In order to calculate how much an importer will pay, the EU decides on a benchmark for the emissions of the products. When the products are imported, the EU calculates the number of allowances and the cost of these.

Example

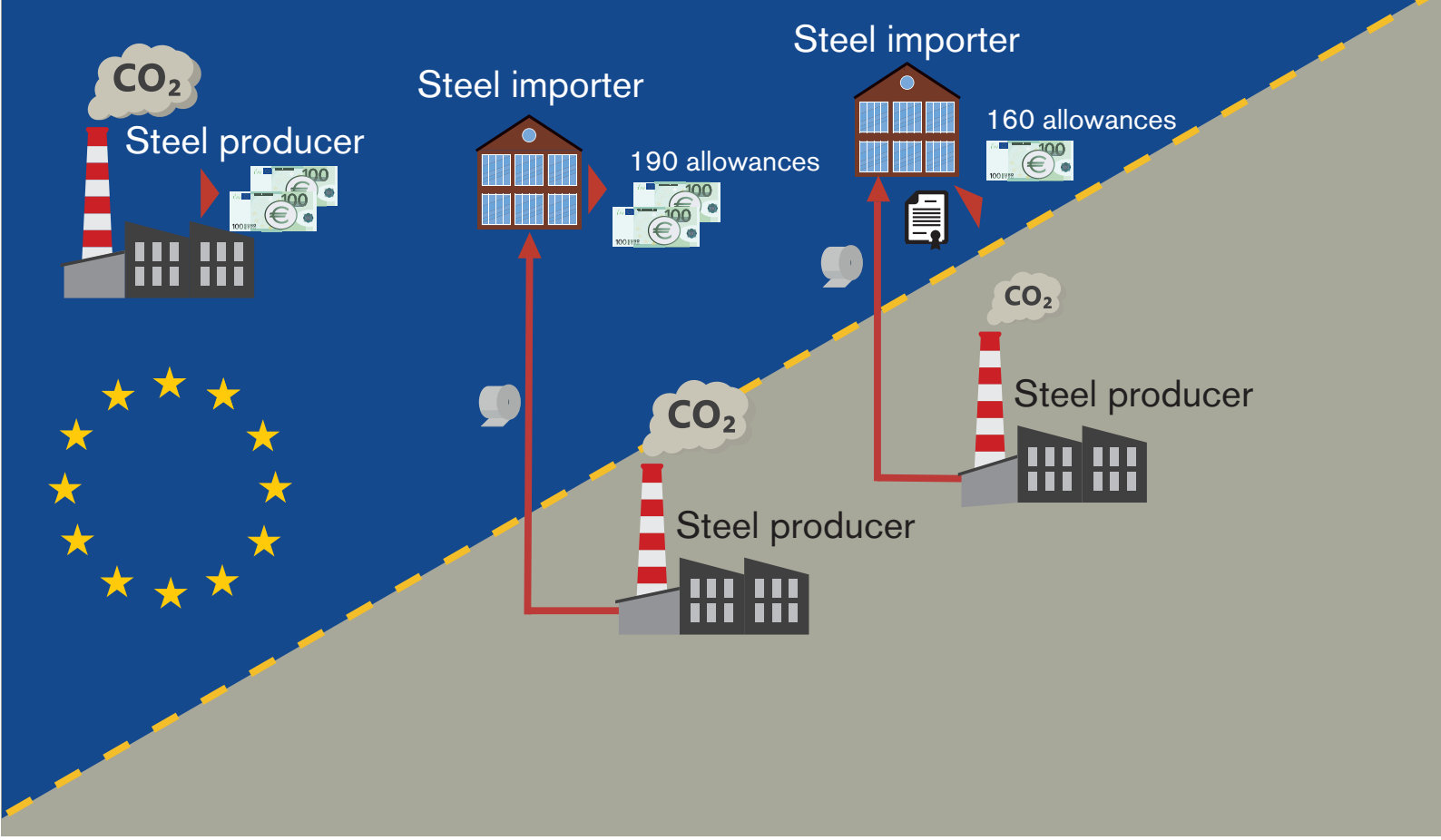
Simple calculation example

Imported weight: 100 tonnes
Emissions per unit of weight, benchmark: 1.9 tCO2eq /tonne steel
ETS price 25 euros

Number of allowances: 100 * 1.9 = 190 allowances

Cost: 190 * 25 = 4750 euros

However, for the system to be efficient and compliant with WTO rules, the BCA must take climate efforts made by other countries into account the work companies and countries outside of the EU do on climate. In order to pay less for the imported products, importers will be given the opportunity to present documentation of this.



Importers can show if emissions from the production have been lower than the EU benchmark and/or, for example, if a carbon tax has already been paid in the country of production.

Example

Simple calculation example

Emissions from the production have been lower than the EU benchmark and the exporting company has already paid a carbon tax.

Imported weight 100 tonnes
Emissions per unit of weight, benchmark: 1.9 tCO2eq /tonne steel
Actual emissions in country of production, per unit of weight 1.6 tCO2eq /tonne steel
ETS price 25 euros
Paid carbon tac in production country:
10 euros /tCO2eq

Number of allowances: 100 * 1.6 = 160 allowances

Cost: 160 * (25-10) = 2400 euros

Contents

1 About the project

1.1 Project

On September 19, 2019, the Ministry for Foreign Affairs commissioned the National Board of Trade to analyse trade-related aspects of border carbon adjustment (BCA). In light of the fact that BCA may be implemented within the EU, this study will provide an updated analysis of a number of aspects of BCA.

The documentation includes, *inter alia*, an assessment and analysis of:

- Which forms of border carbon adjustments that currently are discussed or proposed within the EU
- The proposed BCA models' compliance with the rules of the WTO
- How the proposals potentially can affect the EU's international trade
- Possible climate-positive effects resulting from the implementation of BCA and which type of BCA measures that could contribute to the greatest emission reduction and the lowest impact on trade.

The report was written by Fredrik Gisselman and Emilie Eriksson with contributions from Anna Sabelström, Hannes Jägerstedt, Olivier Linden and Anneli Wengelin. It was reviewed by Henrik Isaksson and Kristina Olofsson. This report is a translated version of the report sent to the Ministry of Foreign Affairs in December 2019.

1.2 Method

The analysis is based on literature studies, where research articles, scientific reports, and other relevant literature have been analysed. One of the starting points has been the Boards previous analyses published in 2009[1] focusing on the legal and economic aspects of border carbon adjustment as well in 2010[2] when the Board analysed BCA from a trade-facilitation perspective. In addition, the Board of Trade has carried out new legal and economic analyses. The Board has also chosen to consult with the Swedish Environmental Protection Agency and a number of experts in the fields of international trade, economic instruments for climate action and WTO law.[3]

[1] National Board of Trade (2009)
[2] National Board of Trade (2010)
[3]The National Board of Trade would like to thank a number of experts who have contributed on various subjects in this work, *inter alia*, Michael Mehling, Åsa Löfgren,

2 Introduction

Climate change is one of the greatest and most difficult challenges of our time, perhaps the greatest and most difficult. Scientific reports clearly show the major negative consequences that a changing climate can have on humanity. In 2018, the Intergovernmental Panel on Climate Change (IPCC) published a report that has been described as the final warning for countries to act. The report states, *inter alia*, that global emissions must reach net zero by 2050 in order to achieve the objectives set out in the Paris Agreement of pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels.[4]

On November 28, 2019, the European Parliament voted to announce a "climate emergency".[5] This has no practical significance in itself but occurred only a few days before the new European Commission, led by Ursula von der Leyen, took office on December 1. Von der Leyen's commission has put climate issues at the top of its agenda. In the policy statement for the term of office, climate is the first item (the European Green Deal). The matter of the connection between international trade and climate is addressed on the very first page:

To complement this work, and to ensure our companies can compete on a level playing field, I will introduce a ***Carbon Border Tax*** *to avoid carbon leakage. This should be fully compliant with World Trade Organization rules. It will start with a number of selected sectors and be gradually extended.*[6]

Thereafter, Von der Leyen, in her mission letters to several of the commissioners[7], has stated that this is a task they must handle immediately. With the announcement of the European Green Deal, it was

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Karsten Neuhoff, Susanne Droege, Aaron Cosbey, Milan Elkerbout, Johan Rootzén, Runar Brännlund, Markus Wråke, and Joost Pauwelyn. They are however not responsible for the content of this report.

[4] IPCC (2018)

[5] https://www.europaportalen.se/2019/11/eu-parlamentet-utropar-klimatnodlage

[6] https://ec.europa.eu/commission/sites/beta-political/files/political-guidelines-next-commission_en.pdf.

[7] The President of the Commission, Von der Leyen, in her mission letter to the Commissioner of Finance, has commissioned him to lead the work of developing a proposal for a border carbon tax, in close collaboration with Commissioners of a New Green Deal and the Commissioner of Trade. Mission letter to Gentiloni: https://ec.europa.eu/commission/sites/beta-political/files/mission-letter-paolo-gentiloni_en.pdf Mission letter to Timmermans: https://ec.europa.eu/commission/sites/beta-political/files/mission-letter-frans-timmermans-2019_en.pdf and mission letter to Hogan: https://ec.europa.eu/commission/sites/beta-political/files/mission-letter-phil-hogan-2019_en.pdf.

also announced that a proposal on border carbon adjustments will be presented in 2021.

The purpose of this report is, in addition to attempting to answer the questions of the Ministry of Foreign Affairs, to explain several of the most central issues related to introducing a border carbon adjustment measure. Why is such a measure required? What are the important pros and cons of the design of such a system and what effects can the different choices of design have on EU's trade, compliance with WTO rules and carbon emissions?[8]

To understand BCA, some background knowledge, both with respect to climate policies and the relevant WTO rules, is required. Without it, the discussion can easily be simplistic, and BCA may be rejected as a trade-obstructing measure despite its purpose to contribute to reduced emissions.

Therefore, the report consists of a number of parts and may, depending on the degree of previous knowledge and interest, either be read in its entirety or in parts. The remainder of the report is structured as follows: Chapter 3 provides an overview of the climate policy background and Chapter 4 provides basic information on BCA and presents the concrete proposals presented at the EU level. Chapter 5 analyses parts of the WTO rules that are relevant to the design of BCA. Chapter 6 discusses possible designs of BCA and provides recommendations on how to design an effective BCA. Chapters 7 and 8 describe the potential trade effects. Chapter 9 provides guidance on important aspects related to the process of introducing BCA. Finally, the report ends with conclusions and recommendations in Chapter 10.

[8] Throughout the report, we will be using the term carbon dioxide or carbon but this should be interpreted in a broader sense and may include all relevant greenhouse gases.

3 Climate policy background

Border carbon adjustments (BCA) have been discussed for more than a decade, and a number of research reports[9] as well as more or less concrete proposals[10] have been presented without resulting in the introduction of such an instrument.

In 2009, the National Board of Trade published a report on the legal and economic aspects of introducing BCA[11], and, in 2010, a report that analysed BCA from a trade-facilitation perspective.[12]

The conclusions from many of these analyses have been that an introduction of BCA is complicated, but that it may be possible to introduce a system that creates incentives for reduced emissions that is not too administratively heavy and also compliant with the WTO.

3.1 The Paris Agreement

The Paris Agreement is the comprehensive global agreement negotiated to counteract climate change. The ultimate goal of the agreement is to keep the warming below 2 degrees and that efforts should be made to keep the increase below 1.5 degrees compared to pre-industrial levels.[13] This shall be put in relation to the fact that up until today, we have exceeded 1 degree of warming and that the global temperature increases by approximately 0.2 degrees per decade.[14]

The fact that all countries[15] of the world has signed the Paris Agreement indicates major global consensus towards achieving these objectives.[16] However, the Paris Agreement does not contain any specific commitments on how much each country shall reduce its emissions. Instead, each country may decide for themselves the extent of the emission reduction by submitting so-called nationally determined contributions (NDCs)[17]. These are effective from the year 2020. Everyone who has signed the agreement shall also update their

[9] Some of the most central reports include Mehling et al (2019) and Cosbey et al (2019).
[10] See Section 4.4.
[11] https://www.kommers.se/Documents/In_English/Publications/PDF/Climate-Measures-and-Trade.pdf.
[12] https://www.kommers.se/Documents/dokumentarkiv/publikationer/2010/skriftserien/report-2010-5-practical-aspects-of-border-carbon-adjustment-measures.pdf.
[13] https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf.
[14] IPCC (2018).
[15] The Vatican is not a part of the Paris Agreement. 10 countries have not yet ratified the agreement. They include two countries with large emissions, Turkey and Iran.
[16] The US has announced that they are planning to leave the agreement, which, when and if it happens, means that all the countries in the world except the US will be a part of the agreement.
[17] Nationally determined contributions.

commitments every five years, and the commitments shall be increasingly ambitious with each update. The parties shall also submit long-term plans that show how they plan to reduce the emissions in order to be in line with the overall goals of the agreement. The Paris Agreement does not include any sanction mechanisms and is based on voluntary participation.[18]

So far, the nationally determined contributions have only resulted in 20 percent of the countries submitting commitments that are deemed sufficient to meet the objectives of the agreement.[19] If all countries simply met the commitments made so far in the Paris Agreement, and did not increase their ambitions, this would result in between 3.2 and 3.5 degrees of warming. [20]

To put this in context, the UN Environment Programme (UNEP) showed in a new report that the global emissions must be reduced by 55 percent by 2030 compared to the 2018 level if the world was to achieve the 1.5 degree target at the lowest cost. At the same time, global emissions have increased by approximately 1.5 percent per year over the past decade. Global emissions from energy use and from the industrial sector increased even more, by 2 percent in 2018.[21]

The ambition levels differ considerably from country to country. Thereby, the costs that the industry and other economic actors will carry for this transition will also differ between countries and between trading partners. In addition to the varying levels of ambition, the United States has officially requested to withdraw from the Paris Agreement, which creates even larger uncertainties about the country's climate ambitions.

The fact that there are differences between the ambition levels of the countries, is in itself not so strange; it is even inscribed in the climate convention (UNFCCC) that different countries shall take different responsibilities depending on conditions.[22] On the other hand, if the difference in ambitions for emission reductions becomes too great, there is a risk of *carbon leakage*, which may reduce or completely erase the effects of a country's efforts to reduce emissions. The carbon leakage problem is described in more detail in Section 3.4.

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[18] https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf.
[19] Watson et al. (2019).
[20] Climate Action Tracker.
[19] UNEP (2019).
[22] This is specified through the principle of Common but differentiated responsibilities.

3.2 EU's climate goals and policies

3.2.1 The EU's climate goals

Within the framework of the Paris Agreement, the EU has set targets to reduce emissions by 40 percent by 2030 compared to 1990. The EU is also working on a long-term strategy and a long-term goal of becoming climate-neutral by 2050. In the project description to Commissioner Timmermans, responsible for *the European Green Deal*, there are instructions that the EU shall increase its ambition of emission reductions from the current 40 percent to 55 percent by 2030.[23] The long-term strategy will be submitted to the UNFCCC during 2020 as a part of the EU's long-term strategy to achieve the goals of the Paris Agreement.

Sweden's contribution to the Paris Agreement is made through the EU's nationally determined contributions. Sweden has also nationally determined its own climate goal of achieving a net zero emission of climate gases by 2045, which is five years sooner than the goal discussed within the EU.[24]

3.2.2 The industrial sector's emissions

Since the industrial sector is exposed to international competition, it is the most relevant sector for BCA. Within the EU, emissions have been reduced by 23 percent by 2018 compared to 1990.[25] Within the EU Emissions Trading System (EU ETS), which regulates approximately 45 percent of the emissions within the EU, emissions have been reduced by 26 percent by 2017 compared to 2005, when the system was introduced.[26]

Emission reductions carried out within the ETS have primarily occurred in production of electricity, where the coal and lignite consumption has decreased and renewable energy sources have increased considerably.[27] For industrial activity, however, it is a different situation. The industrial sector has, over the past decade, been responsible for approximately 25 percent of the EU's total emissions if we include energy use.

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[23] Mission letter to Frans Timmermans. https://ec.europa.eu/commission/sites/beta-political/files/mission-letter-frans-timmermans-2019_en.pdf.
[24] https://www.regeringen.se/artiklar/2017/06/det-klimatpolitiska-ramverket/
[25] https://ec.europa.eu/clima/policies/strategies/progress_en.
[26] EEA (2018).
[27] Naturvårdsverket 2018.

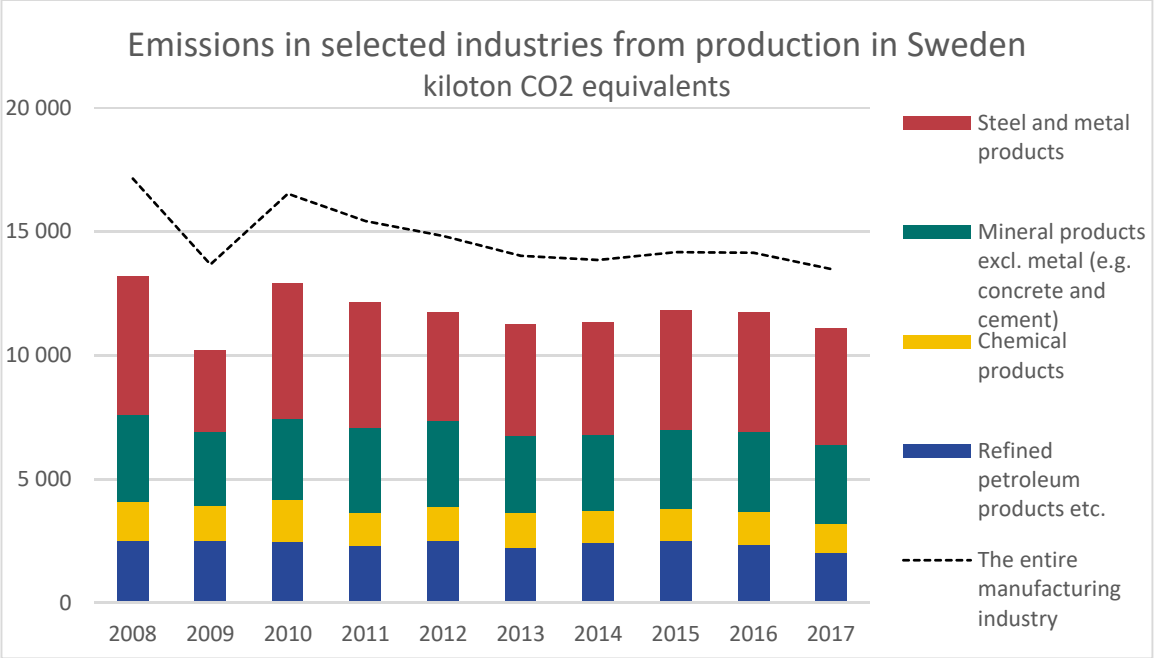

Figure 1. The industry emissions are based on NACE and thus include emissions from energy use (Eurostat AEA).

Even if the total emissions within the industrial sector have decreased since 1990, the emission levels have remained relatively stable over the past decade[28], as shown in Figure 1. If energy use within the industrial sector is not included, the industrial sector's emissions have only been reduced by 1 percent since 2012.[29]

The dashed line shows the emissions of the entire manufacturing industry from 2008 to 2017. The graph also shows emissions from the sectors that are most relevant to include in a BCA.[30] The statistics shown include both process emissions and indirect emissions from energy use such as electricity. These sectors represent approximately 80 percent of the industrial sector's emissions and approximately 20 percent of total emissions in the EU.[31]

The conditions for emission reductions are different for different sectors. The technical possibilities for reducing emissions in energy production and transport are better than the technical possibilities for emission reductions within the industrial sector.[32] This is especially true for the

[28] Åhman & Nilsson (2015).
[29] Sandbag (2019).
[30] These sectors include about 85 different subgroups of products. All these would probably not be included in BCA, rather the latter would include just a selection of specific products belonging to these sectors.
[31] Own calculations based on Eurostat AEA.
[32] Åhman & Nilsson (2015).

basic materials sector where process emissions account for a large proportion of emissions, and these have not been reduced to any significant extent.[33] One reason for the difficulties in further reducing emissions in the industrial sector is that the reductions thus far mainly have been achieved through increased energy efficiency and from shifting fuel sources. Once these options have been used, it is difficult to further reduce emissions. Continued emission reductions in these sectors are likely to require extensive innovations and a technological leap.[34] With the current policy framework, it is difficult for the industry to reduce its emissions to the extent required for the EU to achieve its climate goals.[35]

3.2.3 The EU's policies

To achieve the climate goals, the EU uses a number of instruments. The most central regulations are:

- the Emissions Trading Directive, which regulates the EU Emissions Trading System ETS
- the Effort Sharing Regulation (ESR), which regulates the emission reductions that each member state must make in the sectors outside the scope of the EU ETS, and
- the LULUCF Regulation, which, *inter alia*, regulates carbon sequestration and emissions from soil.

In addition to these three comprehensive regulations, there are a number of other EU regulations aimed at regulating various market failures linked to GHG-emissions.[36]The EU's Emissions Trading System (ETS) is the only instrument at the EU level that creates an explicit price for carbon emissions today. The other regulations mandate emission reductions but without explicitly taxing or pricing carbon dioxide, though individual Member States may choose to do so. However, most of the regulations impose requirements on actors within the union, which often, at least in the short term, leads to increased compliance costs.[37] Both the EU's and Sweden's climate goals will lead to a comprehensive transformation of the Swedish and European economies, and the measures required to achieve these goals will be extensive and expensive.

Since the EU, at present, does not have a common carbon tax, a BCA instrument will most likely focus on correcting price differences for carbon emissions between actors covered by EU ETS with companies in

[33] Ibid.
[34] Bataille et al (2018)
[35] COM/2018/773.
[36] For example, the Energy Efficiency Directive and the Renewable Energy Directive.

the same sectors in countries outside the EU. The other climate regulations are thus less relevant from a BCA perspective.

3.3 The EU Emissions Trading System (ETS)

The EU Emissions Trading System, which also covers the EEA countries[38], was implemented in 2005 and means that the EU determines a common cap for the amount of emissions allowed for the sectors covered. Allowances that correspond to the established emission cap are then created. One allowance corresponds to the right to emit 1 tonne of carbon equivalents[39].

The sectors covered are primarily (1) power and heating plants and (2) energy-intensive industries such as[40]:

* refineries

* coke-oven plants,

* iron and steel industry

* mineral industry (cement, limestone, glass, ceramics)

* paper and pulp industry

* specific chemical industries

* and commercial flights operating within the EEA.[41]

The sectors that are covered by ETS correspond to approximately 45 percent of the EU's total greenhouse gas emissions. The system has, since its implementation, been developed in different phases, and we are currently in phase three. Phase four will start in 2021. Prior to the new phases, the system has been changed and ambitions have been raised.[42]

The main rule is that companies buy allowances on auction. 57 percent of all allowances are auctioned. To avoid the problem of carbon leakage (see further discussion in Section 3.4 below), allowances are distributed free of charge to the sectors deemed to have a high risk of carbon

[38] We consistently use "EU" when describing EU ETS and BCA, but this covers the entire EEA.
[39] In order to make the different greenhouse gases comparable, (e.g. carbon dioxide, methane, nitrous oxide, fluorinated gases) with respect to which effect they have on global warming, these are multiplied by a factor so that everything may be counted in CO2 equivalents.
[40] The sectors included in the system include incineration plants with an installed input of more than 20 MW but also smaller incineration plants if they are connected to a remote-heating networks with a total installed input of more than 20 MW.
[41] Today, EU ETS includes approx. 14 000 facilities within the EEA.
[42] https://ec.europa.eu/clima/policies/ets/revision_en.

leakage. The proportion corresponds to 43 percent of the total number of allowances.[43] The assessment of which sectors will receive free allowances is based on a measurement that includes the level of emission-intensiveness and trade exposure.[44]

Facilities are only allowed free allocation up to a specific level. At present, this limit is calculated based on the best available technology, which is based on the 10 percent most emission-efficient facilities. If more than this is emitted, allowances must be purchased in order to receive full coverage.

Actors covered by the EU ETS are free to trade allowances with each other. Such trade occurs in a marketplace and happens several times a week. It is not just actors covered by the system who can buy allowances; it is open to all actors who create an account with the ETS register. An allowance can be saved for as long as an actor wants to save it. Actors with a surplus can sell allowances on the emission market, and actors with a deficit can buy allowances.[45] On March 31, companies must show the amount of emissions for the previous year, and on April 30, a corresponding number of allowances shall be submitted to the responsible authority in each respective Member State. The authority will then review the reported emissions and the submitted allowances.

To ensure that the EU's climate goals are achieved, the total number of available allowances are reduced annually so that the determined emission reduction for a specific year can be achieved. The EU ETS has a so-called linear reduction factor, which means that the total number of allowances is reduced by 1.74 percent per year for phase three, which is applicable for the period 2013-2020, and by 2.2 percent per year for the period 2021-2030. The linear reduction factor is also applicable for the industries that receive free allocation of allowances. This, along with the decision that only 43 percent of the total number of allowances should be allocated for free, will mean that the total number of allowances will not suffice to cover the emissions caused by sectors in the carbon leakage list. This may increase the risks of carbon leakage in the coming years, despite maintaining free allocation.[46] The fact that the price ofallowances

[43] COM 2016 https://ec.europa.eu/clima/sites/clima/files/factsheet_ets_en.pdf.
[44] The products/sectors covered by free allocation for Phase 3 can be found here: https://eur-lex.europa.eu/legal-content/SV/TXT/PDF/?uri=CELEX:32014D0746&from=EN.
[45] Marcantonini et al (2017).
[46] Zetterberg and Elkerbout, 2020

has increased fivefold over the last 2 years, from about EUR 5 to EUR 25, may also have an impact on this.[47]

A new feature of the EU ETS is that a market stability reserve was introduced in 2019. This aims to manage imbalances occurring in the market as a result of the accumulation of a surplus of allowances over the past decade. However, the effect of this is difficult to assess.[48]

3.4 Carbon leakage

The targets set by the EU and Sweden are at present clearly above the targets set by many other major actors in the world economy.[49] Thus, there is a gap in ambitions for emission reductions. Moreover, given the ambitions of the *European Green Deal*, this gap may soon grow. A too large gap may cause carbon leakage if well-designed tools to manage it are not introduced.

Carbon leakage is usually defined as the increase of carbon emissions in foreign jurisdictions arising from a tightening of climate ambitions in a domestic jurisdiction. The concept is multifaceted, and the leakage may occur through several different channels:[50]

The competitiveness channel, which is the primary focus of BCA, means that production is relocated as a result of the cost increases that the climate policies entail. When prices of products that have been produced within the EU stand to increase as a result of the climate policy, there is a risk that consumers and producers will substitute domestically produced products for cheaper foreign products. In the short term, this could lead to companies in the EU losing market shares. If companies in countries with lower climate ambitions gain market shares, there is the risk that reductions in the EU will be partially or wholly "compensated" by emission increases in other countries.

In the longer term, this can also lead to companies choosing to move outside the EU, to jurisdictions with less strict requirements. If this happens, there is a risk of EU's climate measures having little, no, or even a negative effect, while damaging the EU economy.

Leakage through the *energy market channel* may occur when a reduced demand of fossil fuels in countries with high climate ambitions leads to

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[47] https://sandbag.org.uk/carbon-price-viewer/.
[48] See Konjunkturinstitutet (2018), for an analysis of the effects of the market stability reserve
[49] https://ec.europa.eu/clima/news/european-union-continues-lead-global-fight-against-climate-change_en.
[50] Fischer (2015).

lower world market prices. This may in turn mean that the total use of fossil fuels increases in countries with insufficient or no climate policy. This problem can be particularly severe in the future as fossil fuel production is expected to greatly exceed the levels of fossil fuel that can be consumed in order to be in line with the goals of the Paris agreement.[51]

Finally, there is the *technology transfer channel*, which means that emissions in countries with insufficient climate policies can decrease as a result of countries with ambitious commitments creating new technological innovations and solutions that can then spread to other countries through trade, investments, aid, and knowledge transfer.

Of these three channels, the first two are negative for climate action. The third channel can, on the other hand, contribute to a "reverse" (positive) leakage.

A BCA could, if properly designed, contribute to reduced carbon leakage via the competition channel and increased technology transfer and thus be positive for the climate. BCA, on the other hand, cannot handle leakage through the energy market channel.

3.4.1 How much carbon leakage occurs?

How much carbon leakage occurs when a country introduces carbon pricing while other countries do not? A number of studies have attempted to estimate the amount of leakage that can occur. Usually, this is measured as a change in emissions that occurs in a foreign jurisdiction as a share of domestic reductions of emissions (i.e. what percentage of the domestic emission reduction "moves"). Such studies can either be completed through ex-ante studies, carried out with so-called Computable General Equilibrium (CGE) models or through partial equilibrium models, or through ex-post estimates based on econometric models.

Ex-ante studies have estimated a carbon leakage for industrialised countries as ranging between 5 percent and 30 percent if the measures against leakage are not implemented.[52] For energy-intensive and trade exposed sectors, the results have shown significantly higher numbers, with results ranging from 8 percent up to 90 percent.[53]

[51] SEI, IISD, ODI, Climate Analytics, CICERO, and UNEP (2019).
[52] Böhringer, Balestreri and Rutherford (2012).
[53] See the literature review in Cosbey et al (2019) and Mehling et al (2019).

Econometric (ex-post) studies have confirmed that carbon leakage occurs even though the results of such studies usually show lower numbers.[54] One reason why these studies show lower results than, for example, CGE and partial equilibrium modelling, is that most countries have been aware of the risk of leakage, and thus have introduced different types of exceptions for the sectors that could suffer the most.

3.4.2 Solutions for avoiding carbon leakage - exemptions and free allocation of allowances

Risks of carbon leakage can be managed in a number of ways. One way of managing this is to reduce the costs of carbon emissions in the sectors most vulnerable to the risk of carbon leakage. This process is described below. Other ways to solve this are discussed briefly in box 1.

To avoid the problem of carbon leakage, the EU and a number of other countries that have introduced different types of carbon pricing[55] have primarily chosen to reduce the costs of emissions for the industry that has the greatest risk of carbon leakage.[56] This has been achieved through different types of exemptions and free allocation of allowances.
EU's free allocation is based on the idea that countries with the highest climate ambitions must reduce the cost of carbon emissions in different ways for the industries that are at high risk of carbon leakage. This alternative entails a number of consequences.

Free allocation of allowances creates, in theory, an equally efficient emissions trading system as if the allowances were auctioned. A free allocation retains the incentives for producers to reduce their emissions as the allowances has an opportunity cost, and can be seen as a possible source of income. This is because companies can reduce their emissions and sell allowances instead of using them. Companies thereby have the incentive to reduce their emissions as long as the cost of the emission reduction is lower than the price of the allowances.[57]

However, in practice, there are a lot of problems with the method of free allowances to manage carbon leakage. Companies whose products compete on the world market find it difficult to internalise (transfer) costs of carbon or emission reductions in the end consumer price without losing market shares. Therefore, the price signal has weakened and the price of products does not reflect the actual cost of the emissions.

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[54] See, for example, Garsous & Kozluk (2017).
[55] We are using the term carbon for carbon dioxide throughout the report, but it can also cover other greenhouse gases.
[56] Fischer (2015).
[57] De Bruyn et al (2010).

Consequently, actors who consume these products do not consider the price of carbon emissions in their decision-making, and hence make suboptimal economic decisions.[58]

If it were possible to reflect the price of carbon throughout the value chain, a product that emitted a lot of carbon emissions would be more expensive than an identical and identically manufactured product that emitted less carbon. To exemplify, a company that faced the correct price of carbon would perhaps choose to build a property of wood instead of concrete or choose to use less climate-damaging steel in a car.

Free allocation can also create an expectation among producers that their production volumes affect future allocation of allowances. In other words, the companies can choose to maintain higher production volumes than what would have otherwise been optimal in order to allocate more allowances. This brings down the price of the products and undermines further internalisation of the carbon price.[59] All these factors make the incentives to invest in less fossil-intensive technology and processes low, thus discouraging a widespread demand for products that have less climate impact.[60]

Apart from the problem of free allocation described above, the design of free allocation has been criticised as it may be perceived as a transfer of assets from society to companies that cause emissions. This means loss of revenue for the member states, which could have been used for the work on climate change. Moreover, the calculation methods that form the basis of the free allocation of allowances, have been imprecise and have led to *windfall profits*[61] for companies.[62] As a result of the above-mentioned problems, Sweden has been a driving force in abandoning the free allocation and increasing the share of allowances that are auctioned.

Box 1. Other methods to handle carbon leakage

The best alternative would be if the countries of the world signed a global agreement that determined a price for carbon emissions. This would mean that differences in climate ambitions, and thereby differences in costs of reducing carbon emissions would not occur. Such an agreement would deal with all channels of carbon leakage. However, this has historically proven to be very difficult, and the design of the Paris Agreement, which is based on the parties

[58] Fischer & Fox (2009).
[59] Wood et al (2019).
[60] Ibid.
[61] Windfall profits can be described as profits that companies make as a result of being allocated more free allowances than they need to cover the actual emissions or when the calculation model was based on the fact that the company cannot pass on the cost of carbon dioxide to the final product, but that the possibility nevertheless existed.
[62] De Bruyn (2010).

themselves deciding on the size of emission reductions they wish to undertake, indicates that such an agreement will not be agreed in the near future. The major political and economic conflicts surrounding the distribution of the burden of climate change mitigation are too great.

Another alternative being discussed is to use so-called *climate clubs*. Climate clubs, simply put, are clubs made up of countries that agree to price carbon at an agreed level. The countries that do not join the club are sanctioned by the imposition of duties on imports of products from these countries. At a certain tariff level, the countries not participating in the club would benefit from introducing carbon pricing and joining the club.[63] Climate clubs are, however, difficult to reconcile with the current rules of the WTO.

A third alternative is that countries enter into an agreement that regulates emission reductions for sectors that are at the greatest risk of carbon leakage. Such agreements would thus create the same conditions for the relevant industries and avoid carbon leakage.

A fourth alternative is to use standards and technical rules to a greater extent in order to steer toward a more climate-friendly production and consumption. This could be designed so that only climate-friendly products, both with respect to emissions from consumption but also from the production process, are sold on the internal market. For products that are exposed to the risk of carbon leakage, one proposal is that the EU would determine a time when only products that are climate-neutral in the production process may be sold on the market.[64]

A fifth alternative recently presented is to combine free allocation of allowances with a form of carbon consumption taxes. By introducing consumption fees for products in the basic materials sector that are granted free allocation, the price signal for carbon emissions can be recreated. This thus creates an incentive for efficient use of materials at the consumption stage. The system would mean that products consumed within the EU are charged regardless of whether they have been produced in the EU or in a third country. Exported products do not need to pay this fee. In this way, the products do not have any competitive disadvantage with respect to exports. One disadvantage, from a climate perspective, is that the fee paid is the same for efficient as well as inefficient producers, which does not create an incentive for producers outside the EU to reduce their emissions. Another disadvantage of the system is that it requires a continued free allocation of allowances, which, despite the complement of fees that improve the system, may be politically challenging.[65]

[63] See for example Nordhaus (2015) for an overview.
[64] Dröge et al (2019).
[65] See Neuhoff et al (2016) for a more detailed overview.

4 On border carbon adjustment

4.1 What is the objective of a BCA?

An implementation of BCA may have different purposes. The most common arguments as to why BCA should be implemented within the EU are to:

- enable the phasing out of free allocation of allowances without increasing the risk of carbon leakage,
- maintain competitiveness for the domestic industrial sector when ambitious and expensive climate policies are introduced (thus avoiding internal opinion against ambitious climate policy), and
- as a way of exerting pressure on other countries to implement more ambitious climate policies.

The first two arguments are closely linked as both relate to the relocation of where production takes place as a result of more ambitious climate policy. Though they are closely linked, there are some differences, as the first argument primarily focuses on the effects on greenhouse gas emissions, while the second focuses on the effects on income, market shares, production, and jobs.

It is important that the primary purpose of introducing BCA is specified, as the design of the instrument will be different depending on the purpose.

4.2 What would a BCA mean in practice?

The implementation of BCA has been discussed for more than a decade, but no measures have yet been introduced between two countries.[66]

From a purely practical perspective, a BCA would mean that products imported from countries with lower or insufficient climate ambitions are charged a similar tax or fee as domestically produced products with the purpose of avoiding carbon leakage.

This can either be introduced by imposing a requirement on importers or on foreign exporters to pay a fee similar to that imposed on domestic producers, or by requiring them to buy allowances that fully correspond to those that a domestic actor must buy for the same emissions.

[66] The only jurisdiction that has so far implemented the instrument is California, which has introduced border adjustment measures for electricity emissions produced outside the state.

In a very simplified example, an imported product would be charged a cost corresponding to the price of carbon emissions per tonne applicable in the EU, multiplied by the number of tonnes of carbon emissions that occurred during production in the exporting country.

Though the design of the instrument in theory may sound relatively simple, the introduction of such an instrument is in reality very complex. A decision maker who is considering introducing BCA must, *inter alia*, make decisions on which products/sectors to include, which countries to include, manage differences in carbon emissions and prices of carbon emissions in different countries, and whether exports should be rebated.

4.3 Advantages and disadvantages of BCA

Based on economic theory and evaluations through modelling, BCA is often seen as the most effective unilateral tool for preventing carbon leakage.[67] One of the main advantages of BCA is that it allows a country to introduce efficient instruments, such as the removal of fossil fuel subsidies and pricing of carbon emissions without risking that production reallocates and thus increases emissions in other countries. Counteracting reallocation of production can also prevent opposition to more ambitious climate policy and thus enable a country to introduce the measures necessary to achieve its climate goals.

Another advantage of BCA compared to the present system of free allocation of allowances is that the cost associated with carbon emissions is reflected in the consumer price. This applies to both domestically produced products but also products produced in a third country. This may in turn lead to more efficient consumption and also more circular use of materials.

The main disadvantage of BCA is that an implementation may be viewed as a protectionist measure and thus lead to trade conflicts. Another disadvantage is that it is very difficult to design the instrument in an effective way that takes both the practical conditions and the WTO rules into account.

To determine whether to implement BCA or not, the advantages and disadvantages of the instrument must be weighed against the advantages and disadvantages of the available alternatives. This report has not carried out such an analysis.

[67] Fischer (2015).

4.4 Proposed models

Over the past decade, a number of proposals have been presented on the design of BCA. A compilation shows that at least four more or less concrete proposals have been presented within the EU, while a significant number have been submitted in the US.[68] The proposals that have been introduced in the US are less relevant in an EU context, since most of them also include an introduction of a carbon tax. For the EU, the situation is different, since it already has a well-established policy instrument in the form of the EU ETS. A BCA thus must be adapted to this. Therefore, the proposals presented at the EU level are more interesting to examine in this analysis.

The four proposals presented at the EU level are described below. Finally, a summary of the most important components of all four proposals is presented in tabular form.

4.4.1 The FAIR proposal (2007)

In 2007, the Commission presented a draft of BCA legislation, which was never adopted. The proposal, which is abbreviated FAIR (Future Allowance Import Requirement), was presented before the third phase of the EU ETS, and the purpose of the proposal was to address carbon leakage and international competitiveness. The proposal meant that products deemed to be at a significant risk of carbon leakage and that were imported from countries that had not committed and adopted binding measures to reduce greenhouse gas emissions equivalent to those in the EU, would had to buy and submit allowances.[69] Countries that were found to have made binding commitments to climate measures comparable to those in the EU, and countries that had linked their emissions trading system with the EU's, were excluded from the system.

Emissions for imported products are calculated by assuming the same emissions per weight unit as the EU average for the same product. The allowances to be submitted for the imported products are thus calculated on the basis of the EU average emissions for the product, multiplied by the total weight imported, minus the number of allowances that an EU producer has received for the production of the same product.

The proposal also includes provisions for exporters to receive allowances that correspond to the export.[70]

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[68] Mehling et al (2019).
[69] In addition to the EU allowances, the proposal also allowed for international reduction units developed under the Kyoto Protocol or allowances from emission trading systems in third countries that are comparable to the EU.
[70] Up to 2 percent of the EU's total allowances would be set aside for this purpose.

4.4.2 The Carbon Inclusion Mechanism (2009)

The Carbon Inclusion Mechanism proposal was launched by the French government in 2009 as a way of starting a discussion around how BCA could be designed and implemented in the EU. The express purpose of an introduction of the instrument was to manage the risks of carbon leakage and thus contribute to global emission reductions. It is also emphasised that the purpose is not to level the playing field. The proposal does not describe all aspects of the design in detail, but rather demonstrates different options on how such an instrument could be designed. However, the main principles are that imported products shall carry a similar cost as their domestic counterparts and that this should be designed in a WTO-compliant manner.

The products proposed to be covered by the measure are all the products belonging to sectors or subsectors deemed to have a high risk of carbon leakage and that thus can be found on the carbon leakage list.

The proposal presents two different approaches for determining from which countries imported products shall be covered by the instrument. The first focuses on countries not participating in a global ambitious climate agreement. The other approach focuses on specific sectors and includes all countries that have not introduced instruments for these sectors and that reduces emissions in a way that is in line with the EU's ambitions. For both approaches, it is proposed that least developed countries are excluded.

The calculations of how many allowances should be submitted for imported products are similar to that of the FAIR proposal. However, options have been added for third country actors to show if the emissions are lower than the average emissions within the EU for the product in question, which then would enable a lower cost for those products that have emitted less carbon. In this case, the importer must show a verification to confirm the actual emissions from the production. The verification shall then be reviewed and verified by an accredited EU body. It is also stated that the cost of this process shall be kept low enough so that it does not discourage importers from making use of this possibility.

The proposal allows the importers to submit their allowances either by buying them on the ordinary emissions trading market (which then can be increased with the number of allowances that the imports are responsible for, in order to avoid creating major disruptions in the market), or that allowances are created outside the ordinary emissions market, but have

the same price. The latter proposal would not require any changes to the number of allowances on the ordinary emissions market.

The proposal does not provide any concrete information on how one should manage potential export rebates for EU companies; instead, it recommends further analysis regarding the financial and environmental consequences of this. However, the proposal allows for the possibility of deducting the carbon costs for exports, but only if this contributes to reducing the total global emissions.

The potential incomes from the system are proposed to be used for measures for counteracting GHG emissions in third countries.

4.4.3 BCA for the cement sector (2016)

In 2016, yet another French non-paper on BCA was circulated. As a consequence of this and the ongoing work on revisions of EU ETS for phase 4, the proposal was picked up by the European Parliament Committee on the Environment, Public Health and Food Safety (ENVI), and the committee proposed to include it in the greater ETS reform package. The proposal was however finally rejected by the Parliament. The purpose of the proposal was to manage carbon leakage and enable a phasing out of the free allocation and thus avoid its disadvantages.

The non-paper proposed that the BCA should be linked to the emissions trading system, and to focus on products that have high levels of carbon emissions, where these emissions are easy to assess and where there is a limited impact on downstream companies using the material. The paper also proposed the instrument to be introduced gradually, where the focus initially would be on products having limited impact on trade. The proposal identifies cement as a sector that would meet the above criteria. The proposal emphasises that the design must be done in a WTO-compliant manner.

The calculation method presented is the same as that in The Carbon Inclusion Mechanism, i.e. the average emissions for the product in the EU, multiplied by the total weight imported, minus the number of allowances received by an EU producer for the production of the same product. Just as per the previous proposal, third country actors can show if their emissions are lower than the average emissions in the EU.

The new proposal is innovative in that it also allows adjustments for potential climate instruments in a third country. If a third country producer has already had costs associated with GHG emissions, for example if the country has a carbon tax or an emissions trading system, it should be possible to make deductions for this so that these products are

not double-taxed, or that they are completely excluded from the instrument. However, the proposal does not specify how this mechanism could be designed.

The proposal includes more details on design and practical solutions than the previously presented proposals. For example, it proposes how the instrument should be handled at the border through the already established system of the Single Administrative Document.[71] The proposal would thus not require any larger new customs formalities. Most of that which is required to manage the instrument is already set out in the customs declaration. (Each product with a customs code that is imported to the EU is linked with a product code in the Emissions Trading System, where the number of allowances that must be purchased and submitted within the Emissions Trading System is calculated).

4.4.4 French Proposal (October 2019)

In the autumn of 2019, France presented a non-paper on how the EU should design a regulation for BCA. The proposal includes concrete suggestions but also specifies some areas that need more analysis and evaluations. The proposal establishes that the purpose of introducing a BCA is to avoid carbon leakage. It further establishes that BCA is a more effective system than the current system of free allocation of allowances. It was also discussed that BCA could reduce the EU's climate footprint from imports, which has increased in recent years.

The proposal suggests that the BCA should be linked to EU ETS by obliging importers to buy specific *EU Importers Allowances* with the same cost as the ordinary allowances within EU ETS. It is further proposed that the regulation initially should focus on a limited number of homogenous products within the sectors that are at high risk of carbon leakage, in particular cement and steel. Even refineries and the aluminium sector are cited as potential sectors.

The calculation method is the same as the one proposed in the Cement Proposal, i.e. the EU's average emissions for the product, multiplied by the total weight imported minus the number of allowances that an EU producer has received for the production of the same product. Just as the Cement Proposal, it shall be possible for importers to show if the actual emissions are lower than this level. One change to the proposal, however, is that it opens up for other levels than just the average emissions in the EU as a benchmark value. Other solutions that are proposed are the

[71] The Single Administrative Document (SAD) is a form that is used for customs declarations in EU, Switzerland, Norway, Iceland, Turkey, North Macedonia and Serbia.

global average or a benchmark value based on the EU's top 25 percent or 10 percent dirtiest producers. Such a standard value would possibly lead to greater costs for third country producers.

The proposal also allows for the possibility to make adjustments for carbon prices that have already been paid in the home jurisdiction. Various suggestions for solutions are presented in this regard. Furthermore, solutions are proposed on how to solve any evasion of the rules. Among other things, it proposes that the measurement methods used by third country producers must be based on the EU ETS regulation for monitoring and reporting of greenhouse gas emissions[72] in order to ensure comparability. It is further proposed that auditors auditing the reported emissions shall be accredited by the EU.

In an introductory phase, it is proposed that the free allocation should be retained, to be phased out over time. Since the calculation method takes the free allocation into consideration, the number of allowances that the importer must purchase will thus be few in the beginning and then increase over time as the free allocation decreases. The argument for retaining the free allocation is to avoid excessive effects on downstream users and less favourable export opportunities. The proposal also discusses whether export rebates should be implemented for EU producers when the free allocation is completely phased out. The proposal does not favour one standpoint over another; instead it calls for in-depth analyses to be carried out.

The proposal also discusses the size of potential revenue. The assessment is that if BCA focuses on steel and cement, while retaining the free allocation, revenue may amount to a few hundred million Euros annually, and if the free allocation is phased out, the number may be five times greater. It further emphasises the possibility that moving towards full auctioning within EU ETS may generate revenue equivalent to six billion Euros annually. The proposal does not mention how the revenue should be used.

Finally, it is proposed that the introduction of BCA should be initiated with a test phase, as many actors will be involved and different systems will be set up. Therefore, it is proposed that importers shall be required to purchase allowances but to initially set the price at zero. In this way, BCA can be introduced more quickly and can enable revisions in an introductory phase.

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[72] Commission Regulation (EU) No 601/2012 of June 21, 2012 on the monitoring and reporting of greenhouse gas emissions in accordance with Directive 2003/87 / EC of the European Parliament and of the Council.

4.4.5 Summary of the proposals

The proposals presented at the EU level have a number of design components in common. First of all, all proposals focus on the products deemed to have the greatest risk of carbon leakage, which in practice means a selection of basic material products.

Secondly, all proposals are in some way connected to the EU ETS, where the imported products are required to pay the same cost for their emissions as the products produced within the EU. This can be done by enforcing requirements on the purchase of allowances in the ETS market or by paying in another way.

The starting point for all proposals is that the imported products are expected to have the same emissions as the average emissions of the same products in the EU, but the most recent proposal opens up for the use of other, higher benchmark values.

The three most recent proposals also enables demonstrating whether the actual emissions of these products are lower than the benchmark value. Unlike the first two proposals, the Cement Proposal and the most recent French proposal raise the possibility of also making adjustments for costs of already paid taxes or the purchase of allowances in the export country.

All proposals also mean that the free allocation of allowances within the EU, at least initially, should be maintained in some form, but the Cement Proposal clearly states that an introduction of BCA enables a faster phasing out of the allocation. The proposals also, in different ways, deal with any deductions of carbon costs associated with export from the EU.

It is however difficult to assess the details of the proposals in terms of WTO compliance based on the available information. The proposals do, however, not contain any provisions that clearly violate WTO law. It can be noted that there is some uncertainty regarding whether the requirement to purchase allowances can be compared to a *tax or a similar charge* and whether the principle of border tax adjustment is applicable. Possibly, a BCA requiring the purchase of allowances could instead be considered an *internal regulation*. This is important for whether export rebates may be included or not. Otherwise, the WTO compliance would be determined by how the details of the proposals are designed.

Table 1. Summary of BCA proposal at EU level

	FAIR proposal	Carbon Inclusion Mechanism (CIM)	BCA for the Cement Sector	French Proposal, October 2019
WTO compliance	Not mentioned.	Assessed as compliant with GATT, Article XX, paragraph g, by the proposers.	Assessed as WTO-compliant by the proposers. Section of the law is not specified.	Providing necessary conditions are met with respect to the design of the regulation, it is assessed as compliant with WTO rules by the proposers.
Purpose	Manage risks of carbon leakage and maintain international competition.	Manage risks of carbon leakage and contribute to global emission reductions. Specifically noted that the purpose is not to level the playing field.	Manage risk of carbon leakage and enable phasing out of the free allocation.	Manage risk of carbon leakage and enable phasing out of the free allocation.
Countries covered	Excludes countries that have undertaken binding measures comparable to those of the EU.	Two proposals. (i) all countries that do not participate in an ambitious global climate agreement. (ii) Focus on sectors, and includes all countries that have not introduced instruments comparable to those of the EU. Exclusion of LDCs in both proposals.	Focus on sectors and covers all countries. Does not mention how to treat LDCs.	Focus on sectors and covers all countries. Does not mention how to treat LDCs.
Scope of products	Products that are subject to significant risk of carbon leakage, and that come from countries that do not have sufficient climate commitments.	Products at high risk of carbon leakage and that are included in the EU's list of products receiving the free allocation of allowances.	Specific proposal focused on cement but opens up for other products with high emissions and where the effects on downstream actors are small.	Proposal to start with pilot sectors that are at great risk of carbon leakage and are responsible for a major part of the EU's emissions. Specific proposal for cement and steel, but also aluminium and refineries are mentioned.
How to measure the emissions?	Assumption on the same average emissions per weight unit as the EU average for the same product.	Assumption on the same average emissions per weight unit as the EU average for the same product.	Assumption on the same average emissions per weight unit as the EU average for the same product.	Either the assumption on the same average emissions per weight unit as the EU average for the same product, or a target that corresponds to 10 or 25 percent of the most emission-intensive producers, or a global average developed by independent experts.
Continued free allocation for EU companies	Yes, at least initially.	Yes, at least initially.	Yes, but the goal is to transition to full auctioning.	Yes, for a transitional period but gradual phasing out.
Price	Requirements to purchase allowances corresponding to: The weight of the products, multiplied by the EU's average	Requirements to purchase allowances from EU ETS or allowances for importers at the same price. The calculation is based on: Weight of the	Requirements to purchase allowances from EU ETS. The calculation is based on: Weight of the products, multiplied by the EU's average emissions	Requirements to purchase allowances for importers at the same price as the EU ETS allowances. Similar calculation principles as the

	emissions minus the EU producers' free allocation for the same product.	products, multiplied by the EU's average emissions minus the EU producers' free allocation for the same product.	minus the EU producers' free allocation for the same product.	Cement proposal but not determined in detail.
Adjustment of price and emissions	No, not possible to show lower emissions or make deductions for already paid carbon price.	Yes, if an actor has lower emissions than the EU's average, there is a possibility of showing this. Not possible to adjust for already paid carbon fees.	Yes, if an actor has lower emissions than the EU's average, there is a possibility of showing this. Also opens up for adjustment of already paid carbon fees.	Yes, if an operator has lower emissions than the EU's average, there is a possibility of showing this. Also opens up the possibility of adjusting already paid carbon fees or calculating effective carbon price for other climate policies.
Export deduction	Yes, EU exporters receive free allowances that correspond to the export.	Not determined. Proposal on deeper impact assessments for this.	Not mentioned.	Yes, when the free allocation has been phased out, either by providing free allowances equivalent to the exported products' emissions, or through other financial support. Also opens up for compensation to downstream sectors.

5 BCA's compliance with WTO law

5.1 Introduction

The compliance of the above mentioned BCA models' with WTO rules, in particular the *General Agreement on Tariffs and Trade, 1994* (GATT), depends largely on how they are designed in more detail than on what is specified in the proposals, and how the rules of the WTO are interpreted and applied.

The legal analysis can be divided into two main parts, the analysis of the substantive rules[73] in the GATT and the analysis of the exception rules in Article XX of the GATT. Overall, the legal analysis comprises three different steps, described below.

The first step (step 1) covers how BCA should be designed in accordance with the substantive rules set out in GATT, and in particular how to avoid conflicts with the non-discrimination principles. This depends on which rules are deemed to be applicable to BCA. Three different legal alternatives are relevant here:

(i) a *customs duty* or other duties or charges (Article II:1(b) in GATT),
(ii) an *internal tax*, or other charge (Article III:2, the first sentence and Article II.2(a), the first sentence in GATT), or
(iii) an *internal regulation* (Article III:4 in GATT).

Then follows a description of the obligations that follow (step 2), particularly the non-discrimination principles, which apply regardless of how we perceive the BCA – as a customs duty, tax, or an internal regulation.

The other part of the legal assessment (step 3) concerns the possibilities available to justify any measures that contradict the substantive rules in GATT, pursuant to the general exceptions set out in Article XX of the GATT. The general exceptions enable WTO Members to prioritise the protection or promotion of certain societal values and interests, such as e.g. protecting the life and health of people, animals, and plants, and the preservation of natural resources and interests over trade liberalisation, market access, or non-discrimination.

As described in detail below, there are a number of uncertainties associated with the design of a BCA in accordance with the substantive

[73] In brief, the rules in GATT can be divided in two parts: (i) the substantive rules, and (ii) the exemption rules, for instance Article XX.

rules in GATT. This means that much of the legal assessment (at least in parts), in the end, most likely will concern how to justify BCA in accordance with the requirements of Article XX in GATT.

Those who primarily wish to read about the possibilities of justifying a BCA with the help of the exemption rules may proceed directly to chapter 5.5 below.

5.2 BCA as a customs duty, tax, or internal regulation?

5.2.1 Alternative 1: A customs duty or a charge imposed on or in connection with import (Article II:1(b) in GATT)

The first question, when designing BCA from a legal perspective, is if it can or would be suitable for the instrument to be designed as a customs duty or a similar duty or charge, according to Article II:1(b) in GATT.

In accordance with Article II:1(b) in GATT, no customs duties or other duties or charges of any kind imposed on or in connection with the importation may be imposed in excess of those imposed to the bound tariffs, i.e. the levels at which a member has bound its tariffs. If the BCA were to be regarded as a custom duty or some kind of an extra *fee*, an "import charge", and lead to the bound tariffs or charges for the imported products being exceeded, it would be contrary to the provision. For the EU, the bound and applied tariffs are generally the same, which means that the room for charging an extra fee in the form of BCA is small or non-existent. Alternatively, the tariff schedules would need to be re-negotiated with the affected members, which would be very difficult. In such a negotiation, the parties shall be compensated through, for instance, reductions of MFN tariffs for other products. If this is not possible, deviations would need to be justified according to the general exceptions set out in Article XX in GATT.[74] Designing BCA as a customs duty or a similar duty or charge can therefore be considered a difficult alternative.

The scope of the provision is broad,[75] which means a requirement to pay a fee for a product's carbon emission, a BCA, could be accommodated within the scope of the provision.

For the BCA to not contradict with the provision, a first alternative is to design the BCA as an internal tax or charge, which are covered by Article III:2(a), first sentence. These can be adjusted at the border in accordance with the principle of border tax adjustment.

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[74] See more below in Section 5.5.
[75] See e.g. Appellate Body Report, *India – Additional Import* (2008).

For BCA to be covered by the provision on internal taxes and charges (Alternative 2), the way BCA is assessed during the assessment of the so-called *threshold issue* would be crucial. The threshold issue determines which of the two provisions should be applied, i.e. if a fee, here the BCA, is to be regarded as a customs duty or an internal tax or a similar charge. On the other hand, what the tax or charge is called in the national legislation, or how the state intends to classify the measure, is not decisive.[76] For the EU, it does not make any difference to the WTO's legal assessment how the BCA is called; what matters is how it would be assessed according to the WTO rules. Nor is the time for payment of the fee of any critical significance for the assessment.

In the case of *China – Auto parts (2008)*, the WTO Appellate Body (hereinafter referred to as AB) established that when determining whether a charge is a customs duty, the question is if the obligation to pay the charge is based on the import or an internal event, such as the distribution, sale, use or transportation of the imported product.[77]

Furthermore, AB specified that the assessment of whether a charge is a customs duty, "must be made in the light of the characteristics of the measure and the circumstances of the case".[78] This must be decided based on an overall assessment.[79]

5.2.2 Alternative 2: An internal tax or charge (Article II:2(a), first sentence, and Article III:2, first sentence, of GATT)

Another alternative for the design of BCA from a WTO legal perspective is for BCA to be designed as an internal tax or a charge, in accordance with Article III:2, first sentence, in GATT. These may, according to the so-called principle of border tax adjustment (BTA), also be applied on imported products, pursuant to Article II:2(a), first sentence, in GATT.

The principle of border tax adjustment is based on the so-called *destination principle*, according to which products are taxed in the country of consumption.[80] If the products are taxed only where they are consumed, countries retain the right to decide their own taxation level, and trade neutrality is maintained since all products are provided equal conditions for competition.[81] The border tax adjustment can either be

[76] Appellate Body Report, *China – Auto Parts (2008)*, para. 178.
[77] Ibid., para. 162–163.
[78] Ibid., para. 171.
[79] Ibid., para. 171.
[80] Tamiotti (2009), p. 100.
[81] Ibid.

designed as (i) a collection of internal taxes on import, and/or (ii) repayment of the tax upon export (in the form of e.g an export rebate).

The purpose of a border tax adjustment measure is, in general, to create equal conditions for competition for domestic and imported products, and to avoid double taxation or no taxation. For example, many countries adjust at the border the excise duties for import of, for example, cigarettes, alcohol, and fossil fuels.[82]

In GATT, the main provision is in Article II:2(a), first sentence. Charges that are equivalent to internal taxes on domestic products may be imposed on imported like products, or in respect of an article from which the imported product is in whole or partially developed or manufactured. A key issue for whether the provision can be applied to BCA is whether BCA would be considered as an internal tax or an equivalent charge.

Unlike the US, where the introduction of BCA has mainly been discussed together with the introduction of carbon tax, all proposals in the EU are, as mentioned above, linked to the EU ETS through, for example, requirements imposed on the purchase of allowances on the ETS market or specific allowances for importers. Unlike in the US, the question in the EU is not about adjusting for a tax in the direct sense. Thus, the matter in question is if a requirement to purchase allowances in the ETS market, or that payment is made in another way, may be compared to a tax or a similar charge, so that the principles of border tax adjustments may be applied.

With respect to the concept "charges of any kind", the panel in *Argentina – Hides and leather (2001)*, stated that the term "charge" signifies, for example, a "pecuniary burden" as well as a "liability" for a person to pay money and even if the measure in question was not a tax in its own sense, it was considered as a tax in accordance with Article III:2, as it imposed an "pecuniary burden" and created a "liability to pay money".83 On the basis of this definition, it does not appear unreasonable for a requirement to buy allowances, which entails an obligation to pay money, to be covered by the provision.

It should therefore be possible to consider that buying allowances to constitute a pecuniary burden, and an obligation for a person, company or importer to pay money. Thus, a requirement to participate in an Emission

[82] Ibid.
[83] The Panel Report, *Argentina – Hides and Leather (2001)*, para. 11.143.

Trading System could be considered an internal tax under Article III:2 in GATT.

Only indirect taxes can be adjusted at the border

Article II:2(a), second sentence, in GATT should be read together with Article III:2, first sentence. The latter provision provides that it includes "internal taxes or other internal charges of any kind" that are *directly or indirectly* applied to the *products*. This means that only the so-called *indirect taxes* can be adjusted at the border. Indirect taxes shall be differentiated from the so-called *direct taxes*, such as income taxes, social security taxes, and taxes on *producers*. These cannot be adjusted at the border.

The difference between *direct* and *indirect taxes* was discussed in a Report by the Working Party on Border Tax Adjustments[84] (hereinafter referred to as the Working Party Report). According to the Working Party, there was a consensus that certain taxes on products could be adjusted at the border, e.g. excise duties[85], sales taxes, cascade taxes, and value-added tax[86]. These taxes are called *indirect taxes*. Furthermore, there was a consensus that other taxes not directly levied on products were not eligible for border tax adjustment. These taxes are called *direct taxes*. Such taxes include social security payments. Moreover, the Working Party noted that there were disagreements on the application of border tax adjustment for some categories of taxes, such as property taxes and the so-called hidden or process taxes, "taxes occultes", including, for example, energy taxes, consumption taxes on capital equipment, and services used for transport and production of other taxable products.

For the principles of border tax adjustment to be applied to BCA, it is necessary, based on the Working Party Report, that it is designed as a tax on a *product* (i.e. an indirect tax) and not as a tax on a *producer* (i.e. a direct tax).

On the other hand, it is unclear whether a tax on carbon that a product has emitted can be considered as an indirect tax that can be adjusted at the border. The literature refers to disagreements in the Working Party Report regarding the so-called hidden process taxes, "taxes occultes" and that it therefore would be doubtful if energy taxes were covered. At the

[84] Working Party Report, Border Tax Adjustments (1970).
[85] In the EU, there are common harmonized provisions on excise duties on alcohol and alcoholic beverages, tobacco products, energy products and electricity. These are contained in Council Directive 2008/118/EC of December 16, 2008 on general rules for excise duty and repealing Directive 92/12 / EEC (the so-called Excise Directive)
[86] The Working Party Report, point 14.

same time, some consider that even if a pure energy tax would not be covered, a tax based on how much energy is consumed during the process, or the carbon that the product has emitted, could be adjusted.[87] Pauwelyn also considers that a carbon tax on products imposed during the distribution or sale can be adjusted.[88] One problem, however, is that carbon emissions do not remain in the product once it has been manufactured; these may be said to be consumed in the production process. The question is whether one can actually consider it as a tax on the product, or a tax on how the product was produced and its production process?

Can carbon emissions during production be considered input products?

Pursuant to Article II:2(a) in GATT, taxes on products or on an article from which the imported product has been manufactured or produced in whole or in part may be border-adjusted. The latter refers mainly to input products. Like energy, carbon emissions do not remain in the product after it has been manufactured, rather it can be said that these are consumed in the production process. The literature has highlighted that this is problematic for the design of BCA. There is disagreement on whether input products, such as energy or carbon emissions, that disappear in the production process, are covered or not, and thus can be adjusted at the border.[89] However, Matshushita, et al. consider that this should be read in.[90] So does Pauwelyn, above all with respect to the fact that the purpose of a carbon tax is to internalise the cost of carbon in the final price to give consumers and producers an incentive to transition to green energy. According to him, a carbon tax is at least indirectly a tax on the product for this reason.[91]

The WTO adjudicating bodies have not had the possibility to consider this matter. However, the panel decision in *US – Superfund (1987)* is sometimes cited to support the interpretation that even tax on some input products, used in the production process, can be adjusted at the border.92 In the dispute, the panel found that an American tax imposed on certain substances used as input products in the production of certain chemicals, and which was imposed on these substances as well as directly on the products, could be adjusted at the border.[93] The panel noted in the case

[87] Matsushita, M. et al, p. 767.
[88] Pauwelyn (2012), p. 29.
[89] Tamiotti (2009), p. 104.
[90] Matsushita, M. et al (2015), p. 767.
[91] Pauwelyn (2012), p. 29.
[92] Tamiotti (2009), p. 104.
[93] Panel Report, *US – Taxes on petroleum and certain imported substances (1987)* (*US – Superfund (1987)*), para. 5.2.4, 5.2.7 and 5.2.10.

that the tax was imposed on the imported products because they were produced by chemicals that were taxable in the US as well, and the tax rate was determined, in principle, based on the amount of chemicals used and not in relation to the value of the imported substance.[94] It was therefore compliant with the principle on equal treatment in Article III:2, first sentence.[95]

In the case, it was unclear whether these substances remained in the final product or had disappeared in the production process, and the panel made no distinction in the matter.[96]

Conclusions on Alternative 2

To summarise, it is only the so-called *indirect taxes*, i.e. taxes or charges on products that in the end can be adjusted at the border. To be covered by the rules of border tax adjustment, it is thus important that the BCA is designed as a tax or a similar charge. Thus, this means that this tax or charge should be imposed based on the grounds of an internal event, such as distribution, sale, or use of the imported product within the EU. To be covered by the rules of border tax adjustment, according to Article II:2 (a) in GATT, it is also important to impose a tax or charge on a product, and not on the producer. Moreover, it would be desirable if the BCA was considered an extension of an internal, domestic, EU tax or charge, in order for the principles of border tax adjustment to be applied.

Based on the panel report in *Argentina – Hides and Leather (2001)*, where the panel held that the term "charge" signifies an "pecuniary burden" and a "liability to pay money", it is not impossible that the WTO's adjudicating bodies would consider an obligation to buy allowances as at least a tax-like fee that may be covered by Article III:2. Considering that none of the current proposals propose to change the EU ETS, it is, however, uncertain whether this could be equated to an internal tax or charge. An alternative would be to introduce a carbon tax throughout the EU.

If the principles on border tax adjustment can be applied, export rebates may also be introduced for domestic production for export. This in accordance with the destination principle, stating that products shall be taxed where they are consumed. Such rebates do not constitute prohibited export subsidies.

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[94] Ibid., para. 5.2.8.
[95] Ibid.
[96] Mehling et al (2019), p. 458–459.

The question of whether a requirement of purchase of allowances can be considered as a tax or a similar charge on a product will, however, finally depend on how broadly the WTO's adjudicating bodies interpret Article II:2(a) and Article III:2 in GATT.

5.2.3 Alternative 3 An internal law, regulation, or provision (Article III:4 in GATT)

As described above, it is uncertain whether a BCA based on importers buying allowances may be equated to an internal tax or a similar charge. A third alternative is to design the BCA as an internal regulation.

The provisions on internal regulations are set out in Article III:4 in GATT, and cover all laws, regulations, and requirements affecting e.g. the product's internal sale, offering for sale, purchase, distribution, or use. Similar to internal taxes and similar charges, internal regulations may also be adjusted at the border, i.e. be applied on imported products, as long as these are not discriminated. A requirement for domestic producers to buy allowances could thereby also be applied to importers. Article III:4 in GATT sets out that imported products must not be treated less favourable than like domestic products. Corresponding requirements must therefore be in place for domestic producers.

It should, however, be noted that for a measure to be considered included in the provision, it should, as the rules on internal taxes and similar charges, be applicable on the product, and not the producer. The provision only covers laws, regulations, and requirements that concern e.g. internal sale, distribution, or use of the products. For this reason, in order for the provisions to be applicable, it is important to design the requirement to buy allowances as a requirement for importers that arise, for example, upon sale or use of the product within the EU, and not upon import.

Similar to the rules on internal taxes and similar charges, there is also an uncertainty about whether a domestic rule that considers how the product was produced (i.e. the process and production methods used), as opposed to the characteristics of the product, is included.[97] The key factor is how to interpret the concept "affecting" the product. AB has established that it means "to have an effect on".[98] This is a very broad category.[99] According to case law, the provision covers all laws and rules that may negatively affect the conditions for competition between domestic and imported products. In case law, this category has been interpreted very

[97] See e.g. Pauwelyn (2012), p. 31 ff.
[98] Appellate Body Report, *EC – Bananas III (1998)*, para. 220.
[99] For more information, see Van den Bossche & Zdouc (2017), p. 377–378.

broadly, and, for example, requirements on imported cigarettes to include a tax stamp applied in the presence of a customs inspector have been considered to be covered, as has VAT-related administrative requirements on retailers of imported cigarettes.[100] Based on this, it is difficult to see that a requirement for buying allowances corresponding to the amount of carbon emissions that the product has caused in production would not be covered.

In case law, taxes have also been considered to be a measure covered by the provision.[101] Furthermore, in *China – Auto Parts (2009)*, the same Chinese legal provision was considered incompatible with both Article III:2 and Article III:4[102]. This means that a measure such as BCA could be covered by the provision on internal regulation even if it is covered by the rules on internal taxes and charges.

With respect to the broad interpretation that has been made, it is not unlikely that a requirement to buy corresponding real or virtual allowances would be considered to constitute an internal regulation. A requirement to buy allowances should be able to be considered as a provision that affects the sale of the products in question, as the price would be affected and thus affect the competitiveness of the products. Considering that the domestic requirement for EU producers to buy allowances is not called a tax, but rather a requirement or regulation, it may also seem more natural to apply the provisions on internal regulations instead of the rules on taxes and similar charges. A BCA based on the importers being required to buy allowances is therefore most likely an internal regulation.

If Article III:4 in GATT is applicable, the principle of national treatment must be respected. This, like the other non-discrimination principles, is described in detail below.

5.3 WTO's non-discrimination principles that apply to customs duties, taxes, and internal regulations

5.3.1 Introduction

There are two basic non-discrimination principles within the WTO's legal framework that are relevant to BCA. Any deviations from these have to be justified in accordance with the general exceptions set out in Article XX in GATT.

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[100] Ibid. p. 378 f.
[101] *Mexico – Taxes on Soft Drinks (2006)*.
[102] Appellate Body Report, *China – Auto Parts (2009)*, para. 183 and 197.

The first principle is the *principle of national treatment*. It means that imported products must not be treated less favourably than domestic products with respect to, for example, internal taxes and charges, or provisions on sale, purchase, and distribution. It is thus only relevant to taxes or internal regulations, and not if the BCA would be considered as a customs duty or a similar duty or charge.

The other principle is the most-favoured-nation principle, the so-called MFN principle. It means that each advantage, for example a customs duty or fee reduction that a WTO member provides to another country shall, immediately and unconditionally, be provided to all other WTO Members. The principle is relevant for all types of measures, and thus applies regardless of whether BCA is found to be a customs duty, a tax, or an internal regulation.

Finally, it can be mentioned that there are more non-discrimination principles in GATT. The most relevant here is Article X:3 in GATT. What the principles entail in more detail is described below, along with a brief description of how they can be applied to the different proposals.

5.3.2 The principle of National Treatment (NT) for internal taxes and internal regulations

The first non-discrimination principle is the principle of national treatment. According to this provision, imported products shall not, neither directly nor indirectly, be subjected to any form of internal taxes or other charges *in excess* of those that directly or indirectly are applied on like domestic products (Article III:2, first sentence, in GATT). For the design of BCA, this means that if BCA is viewed as an internal tax or similar charge, the imported products may not be subjected to higher costs for their emissions than what the equivalent domestic products pay for their emissions. Nor may imported products be charged with internal taxes or other internal charges so as to afford protection to domestic production (second sentence). An equivalent provision for national regulations is set out in Article III:4 in GATT. According to that provision, imported products must not be treated *less favourably* than domestic products.

With respect to the first requirement to not tax or charge imported products *in excess of* domestic products, it should be noted that the requirement is absolute, even the smallest amount is too much.[103] Moreover, it is the real tax burden that should be compared. The panel in *Argentina – Hides and Leather (2001)* noted, for example, that the WTO

[103] Appellate Body Report, *Japan—Alcoholic Beverages II (1996)*.

parties could easily bypass the provision by using different *calculation methods* if the real tax burden was not considered.[104] For the BCA to not contradict the provision, the literature finds that the safest way would be to base BCA on the lowest tax or charge that domestic producers pay.[105] The requirement to not treat imported products less favourably than domestic products according to Article III:4 in GATT, mainly means that the imported products must have the same effective competitive opportunities. Imported products must not be treated in such a way that they are less able to compete with domestic products.[106] There must also be a genuine connection between the measure and the "negative impact on the conditions of competition for the imported products". For the design of BCA, this could mean that the requirement on importers to buy allowances may not far outweigh or be much greater than for corresponding domestic producers. This is because the imported products in this way could find it more difficult to compete with domestic products.

The provisions cover both direct discrimination, so-called *de jure* discrimination, and indirect discrimination, so-called *de facto* discrimination. *De jure* discrimination is, for example, discrimination based on law, while *de facto* discrimination is discrimination that occurs in practice. In *EC – Seal products (2013)*, the panel held, for example, that the EU's exemptions for seal fishing for marine resource management purposes, gave Canadian and Norwegian seal products a less favourable treatment than Greenland products. The panel established this based on the presented evidence that showed that the greatest majority of seal products from Canada and Norway did not gain access to the EU through the exemptions, while nearly all domestic seal products qualified.[107]

For the design of BCA, this means, above all, that the calculation of the price and the measurement methods for the emissions must not be designed in a discriminatory way. They must not be designed in a way where domestic products are found to be favoured by using the measurement method.[108] The requirement for equal treatment applies to "like products". Products that are not like may be treated differently. What constitutes like products is described in more detail below in Section 5.4. At the same time, it can also be noted that imported products may also not be charged with internal taxes or other charges so as to

[104] Panel Report, *Argentina – Hides and Leather (2001)*, para. 11.182.
[105] Mehling et al (2019), p. 461.
[106] Van den Bossche & Zdouc (2017), p. 390–391.
[107] Panel Report, *EC – Seal Products (2013)*, para. 7.608–7.609.
[108] For more information on this, see Section 6.4.1 below.

afford protection to domestic production (Article III:2, second sentence). The provision is broader than the provision in Article III:2, first sentence[109], and can thereby cover taxes or charges that are compliant with Article III:2, first sentence. This requirement applies to products that are in direct competition or substitutes.[110]

5.3.3 The MFN obligation

The non-discrimination obligation of the most-favoured-nation (the so-called MFN principle) in Article I of GATT, stipulates, *inter alia*, that with respect to all types of customs duties and charges of any kind for import, any advantage, favour, privilege, or immunity granted by a WTO Member for a product from any other country shall, immediately and unconditionally, be granted to like products from all other WTO Members. The category "any advantage, favour, privilege, or immunity" is broad. The provision protects expectations on equal conditions for competition for products imported from different countries.[111] For example, a lower applicable fee is undoubtedly considered an advantage.

Also, all the rules and formalities associated with imports are covered by the obligation of non-discrimination. Moreover, non-fiscal border measures, such as less complicated license procedures, are also covered. Not only actions but also non-actions may be an advantage. In addition, not only custom duties and charges are covered, but also the method for determining them.

If the measure is covered by the provision and constitutes an advantage, favour, privilege, or immunity, it shall be applied non-discriminatorily, in the same way for like products (see below in Section 5.4).

Like the principle of national treatment, the MFN obligation also, covers both *de jure* and *de facto* discrimination. For example, an exemption from import tariffs, which in practice favoured a limited number of countries, was found to be a *de facto* discrimination which was not compatible with Article I:1 in GATT.[112] In *EC – Seal Products (2013)*, the panel noted that while virtually all Greenland seal products were likely to qualify for the exemption for Inuit and Indigenous peoples for access to the EU market, the vast majority of Canadian and Norwegian did not. Therefore, based on the "design, structure and expected use" of the exemption, the panel considered, that the exemption negatively affected the Canadian and Norwegian products' competitiveness

[109] Van den Bossche & Zdouc (2017), p. 366.
[110] Note Ad to Artikel III:2.
[111] Appellate Body Report, *EC – Seal Products (2014)*, para. 120.
[112] Appellate Body Report, *Canada – Autos (2000).*

compared with the Greenland products. This constituted a de facto discrimination in conflict with the MFN obligation.[113]

To avoid discrimination of like products from different countries, in conflict with the MFN obligation, for the design of BCA, it is important that the instrument is not designed in such a way that countries are treated differently in practice. This could, for example, be the case with BCA if countries that have adopted climate policy measures would, in practice, be treated more favourably as their industries and producers, to a large extent, have already transitioned to cleaner production. In that case, the whole system would need to be justified with the support of the general exceptions in Article XX.

Furthermore, both the Cement Proposal and the French proposal of 2019 proposed that when designing the BCA, an importer should be granted deduction for other countries' climate policy measures. This would, however, according to Hillman and Pauwelyn, most likely be in conflict with the MFN obligation, as products would be given advantages based on their country of origin.[114]

5.3.4 Article X:3 in GATT

Article X:3 in GATT contains a provision that each WTO Member shall administer all its laws, regulations, decisions, and rulings with respect to, *inter alia*, taxes, fees and requirements or restrictions on imports, in a consistent, impartial and reasonable way. The provision also applies to laws and rules that, for example, affect the sale, distribution, or use of products. If BCA would mean that heavier administrative requirements are imposed on imported products than on domestic products, for example, with respect to requirements on measurement of emissions, this could be in conflict with the provision. This applies regardless of whether BCA is viewed as a customs duty, tax or an internal regulation.

As further described below in Section 6.4.1, requirements that everyone should measure the real emissions, for example, would most likely result in heavier requirements for importers or third country producers than for domestic producers. This would probably not be compatible with Article X:3.

[113] Panel Report, *EC – Seal Products*, (2013), para. 5.95.
[114] Hillman (2013), p. 12, and Pauwelyn (2012), p. 42.

5.4 Equal treatment of like products

5.4.1 Introduction (Article III:2, first sentence, in GATT)

As mentioned above, the principle of national treatment in Article III:2, first sentence, in GATT, means that like products should be treated equally. Like foreign products may not be taxed or charged more than a domestic product. Products that are not like may, however, be treated differently. Corresponding requirements for the treatment of products with respect to internal regulations apply pursuant to Article III:4. Also in Article I in GATT, it is stipulated that the prohibition against discrimination between countries applies to like products. For the design of BCA, assessing which products are like is therefore crucial.

More specifically, when it comes to the design of BCA, the question is whether products can be considered to be different depending on the way they have been produced, i.e. by the amount of greenhouse gases they have emitted in the production process. As an example, let us take two steel products, where one has been produced using traditional technology and thus has emitted significant carbon emissions, while the other has used a more climate-friendly technology, and thus has emitted less carbon. May these two steel products be taxed differently according to the substantive rules in GATT, or are they considered to be like products?

In an initial phase, it should be noted that though the concept “like products” is used in several provisions in GATT, it does not mean that they should necessarily be implemented and applied exactly the same. Moreover, the assessment may also differ between different countries. In general, however, this should be assessed in the same way based on the same criteria at set out in Article III:2, first sentence, except for, for example, the breadth. Therefore, the explanation below is primarily based on an assessment, pursuant to Article III:2, first sentence, in GATT.

5.4.2 Assessment criteria

In order to determine whether two products are like, pursuant to Article II:2, first sentence in GATT, an analysis should be made of all the relevant criteria in the individual case. This can, for instance, include the following (though not exhaustive):

(i) **properties of the product, nature and quality** (i.e. physical characteristics);
(ii) **the end use of a product in a given market** (i.e. the extent to which products are capable of performing the same, or similar, functions or end-uses);
(iii) **consumers' tastes and habits** (or "consumers' perceptions and behaviours", in relation to the products, i.e. the extent to which consumers consider the products to be substitutable); and
(iv) **the products' tariff classification** according to the Harmonised System (HS nomenclature).[115]

According to AB, the concept "like products" shall be interpreted narrowly.[116] Furthermore, AB stated in the report *Philippines – Distilles Spirits (2012)* that the assessment of likeness is about determining the nature and extent of a *competitive relationship* between imported and domestic products.[117]

To summarise, an overall assessment must be made in the individual case to determine the similarity between the products and, *inter alia*, pricing may also be relevant.[118] In addition, internal rules that apply to the products, such as the same domestic rules on marketing, distribution, labelling or health, can also be taken into account.[119]

The doctrine contains differing opinions on whether products with low and high climate impact are like products or not.[120] Historically, products have never been differentiated with respect to processes and the production methods used to produce them. In the legal doctrine, however, scholars are not convinced that this view still fully applies, especially if this may be considered in the assessment of consumers' tastes and habits.[121] For the design of BCA, the question is whether consumers, to a significant degree, differentiate between, choose, and buy products

[115] Appellate Body Report, *Philippines – Distilles Spirits (2012)*, para. 170 and Van den Bossche & Zdouc (2017), p. 358.
[116] Appellate Body Report, *Japan – Alocoholic Beverages II (1996)*, para. 114.
[117] Appellate Body Report, *Philippines – Distilles Spirits (2012)*, para. 170.
[118] Van den Bossche & Zdouc (2017), p. 357 and 360.
[119] Ibid., p. 357.
[120] See e.g. Mehling et al (2019), p. 460 and Hillman (2013), p. 7.
[121] Van den Bossche & Zdouc (2017), p. 388 f. and p.319.

depending on whether or not they are produced using environment-friendly technology. So far, however, the WTO adjudicating bodies have primarily taken this into account in the application of Article XX. For instance, in *US – Shrimp (1998)*, AB agreed with the panel that shrimps captured with or without measures that saved tortoises were like products. At the same time, which was new, AB determined that measures that considered the foreign process and production methods, i.e. how the shrimps had been produced, could be justified pursuant to Article XX in GATT.

With respect to replacement products and products that are in direct competition (Article III: 2, second sentence), however, AB in *Canada – Certain Measures Affecting the Renewable Energy Generation Sector (2013)*, has implied that products that are produced in different ways can be considered to be different.[122] In the assessment under the WTO Agreement on subsidies and countervailing measures, AB also held that renewable electricity (i.e. electricity produced by wind and solar heating) did not compete with other, conventionally produced, electricity.

Furthermore, of interest to this study, unlike the panel in *EC – Asbestos (2001)*, which concerned the concept of like products according to Article III:4, AB stated that the health risks (carcinogenic) posed by asbestos fibres should be taken into account in the likeness assessment.[123] According to AB, evidence of a health risk may impact the assessment of competitiveness between different products on a market and also consumers' tastes and habits. In this case, AB believed that the evidence indicated that the products were not like.[124]

AB further stated in *EC – Asbestos (2001),* with respect to the different cement types, that both companies' and individual consumers' tastes and habits should be considered,[125] which is relevant for BCA. Since BCA, at least initially, will focus on basic material, it will primarily be companies that buy the products covered by BCA.

In addition to taking into account the risks to human health posed by a product in the likeness assessment, the literature has also equated this to risks posed to the environment as long as the risks stem from the physical properties of the products or are reflected in consumer preferences.[126]

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[122] Appellate Body Report, *Canada—Certain Measures Affecting the Renewable Energy Generation Sector (2013)*, para. 5.63.
[123] Appellate Body Report, *EC – Asbestos (2001),* para. 113 and 114.
[124] Ibid.*,* e.g. para. 53.
[125] Ibid.*,* para. 130.
[126] See e.g. IISD & Unep (2014), p. 41.

5.4.3 Assessment of "like products" for products that are covered by BCA

To determine whether two products that are covered by BCA are like, a thorough analysis of the products in question would need to be carried out, which is not within the scope of this study.[127] It can, however, be noted that there is generally no major physical difference between, for example, two steel products with different carbon footprints. This is regardless of whether one is produced using traditional technology and the other using newer, more climate-friendly technology. In the same way, with the current tariff classification, there is generally no difference made between steel plates that are produced in one or the other way.[128] Based on consumer tastes and habits, one could, however, consider that the products could be considered to be different. Increasingly, consumers differentiate between products based on their carbon footprint, with respect to, for example, meat, dairy products, and electricity. More and more consumers, like importers and producers, are aware and consider that it is important to have products that cause little or no emissions. For many companies, this has also become an increasingly important issue.[129]

When taken together, it is therefore not entirely unlikely that products would not be considered to be like according to Article III: 2, first sentence, Article III:4, and Article I based on the method by which they were manufactured and the amount of carbon dioxide they emitted. From a European consumer's perspective, it is doubtful whether products with completely different climate impact can be completely interchangeable and can be considered to compete on the same market. For the design of BCA, it would be easier if products with different carbon footprints were not considered like, but instead could be treated differently.

5.5 Justification through application of general exceptions s (Article XX in GATT)

Even if BCA, if reviewed by the WTO adjudicating bodies, would be considered to be, wholly or partially, in conflict with the substantive rules in GATT[130], the measure can potentially still be justified with the help of the general exceptions in Article XX in GATT. In our case this could be the case if, for example, the WTO adjudicating bodies consider that the rules on border taxes, a customs duty, or internal regulation cannot be

[127] Incl. e.g. substitution analyses and market analyses
[128] One exception is bioethanol (an agricultural product), which can be divided depending on whether it is based on "agricultural commodity" or others (such as fossil or cellulose).
[129] See e.g. Siemens, Skanska, HM, and SSAB.
[130] Van den Bossche & Zdouc (2017), p. 547.

applied on BCA or that BCA in its entirety or parts thereof is found to be discriminatory against imported products.

It is important to note that what is to be justified pursuant to the article, is the aspect or the aspects that gave rise to the non-compliance with GATT.[131] Every individual non-compliance need to be justified. For example, with respect to the question of *de facto* discrimination of foreign products, the question would be whether this discrimination has a climate purpose that can be justified by the provision?

Article XX is a balancing provision that allows balancing of different interests and enables the WTO Members to prioritise the protection or promotion of certain societal values and interests over trade liberalisation, market access, or non-discrimination.[132] The exception provisions that are most relevant for this study are the following regarding measures:

> b) necessary to protect human, animal or plant life or health; and
>
> g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.

For a measure, in this case BCA, to be justified, it needs to satisfy paragraphs (b) or (g) but also the introductory clauses, the *chapeau*. The first requirement concerns the content of the measure, while the second requirement concerns the practical application of the measure. What is important in this context is to note that the exemption rule cannot be invoked in order to balance the competitive disadvantages for the domestic industry. On the contrary, it is important to focus on the climate objective of the measure.

It can be noted that the concept of "sustainable development" used in the preamble of the Marrakesh Agreement Establishing the World Trade Organization (WTO Agreement) has evolved into a principle to guide the interpretation of the WTO agreements.[133] Some consider that the statement made by AB in *US – Shrimp (1998)* may have meant that WTO law should now be interpreted and applied in accordance with "the emerging principles and legal standards for sustainable development".[134] In subsequent rulings, it has also expressly been referred to as the

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[131] Appellate Body Report, *EC – Seal Products* (2014).
[132] Van den Bossche & Zdouc (2017), p. 545–546.
[133] IISD & Unep (2014), p. 36 and see e.g. AB report, *US – Shrimp (1998)*, para. 129 and 153.
[134] IISD & Unep (2014), p. 36 with further reference.

objective of sustainable development. For instance, in *China – Raw materials (2012)*, AB stated that it understood the WTO law in its entirety to reflect the balance that the WTO Members have struck between trade and non-trade related interests.[135] Considering that the climate issue is regarded as one of the world's greatest challenges and that all the countries of the world are part of the Paris Agreement, the WTO agreements should reasonably be interpreted in the light of these objectives. If BCA can be clearly shown to contribute to the goals of the Paris Agreement, it should simplify the assessment of BCA's compliance with Article XX.

5.5.1 Measures necessary for the protection of life or health of humans, animals, and plants (Article XX (b) in GATT)

Paragraph (b) consists of a two-part requirement for a measure to be "provisionally"[136] justified, namely that (i) the measure is *designed* to protect human, animal or plant life or health and, (ii) the measure is *necessary* in order to protect it.[137]

Demonstrating the purpose of the measure is considered to be relatively easy and has not led to any major interpretation problems. In general, the stated objective of the measure in the country that introduced the measure is also taken relatively seriously and can include both public health measures and environmental policy measures. However, in order to invoke environmental reasons, it does not suffice to merely determine the existence of a risk to the "environment" in general. On the contrary, the risk has to be specific to the life or health of animals or plants. The WTO adjudicating bodies have, *inter alia*, found that measures to reduce air pollution caused by consumption of petrol[138], measures to reduce risks associated with accumulation of waste tyres[139] and measures to protect dolphins[140], have met the criteria, as have measures to reduce the risks of asbestos[141]. What is interesting here is that in *Brazil – Taxation (2018)*, the panel held that reduction of carbon emissions is also one of the policies covered by paragraph (b) in Article XX in GATT.[142]

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[135] Appellate Body Report, *China– Raw Materials (2012),* para. 306.
[136] As mentioned above, measures to be justified by Article XX need to meet both the requirements of one of the paragraphs and the introductory paragraph, the so-called *chapeau*.
[137] Van den Bossche & Zdouc (2017), s. 557, with reference to the panel report in *China – Raw Materials (2012)*, para. 7.479–7.480.
[138] Appellate Body Report, *US – Gasoline (1996*).
[139] Appellate Body Report, *Brazil – Retreated Tyres (2007).*
[140] Appellate Body Report, *US – Tuna II (Mexico) (art. 21.5) (2015)*.
[141] Appellate Body Report, *EC – Asbestos (2001)*.
[142] Panel Report, *Brazil – Taxation (2018),* para. 7.880.

In addition, the measure needs to be designed in a way that shows it aims to attain the goal

In *China – Raw Materials (2012),* the panel held that China had not succeeded in showing that China's export restrictions in question were designed as a "part of a comprehensive environmental protection framework" upheld to reduce pollution and that the purpose was to protect health.[143] For the application of the provision, it would thus be important for BCA to be designed in a way that it, in its entirety, could be considered "part of a comprehensive environmental protection framework" that aims to reduce carbon emissions.

The measure needs to be necessary to protect human, animal or plant life or health

With respect to the necessity requirement, it has historically been quite difficult to prove.[144] Recently, however, the WTO adjudicating bodies have had a more flexible approach.[145] The assessment weighs a number of factors, such as:

(i) the measure's contribution to the policy goal;
(ii) the importance of the interests or values at stake; and
(iii) the measure's effect on international trade.[146]

Thereafter, this preliminary result shall be weighed against possible alternative solutions that may be less trade-restricting while providing an equivalent contribution to the achievement of the objective.[147] It can be further noted that the more important a certain societal value that the measure aims to protect and the more the measure contributes to promoting the goal, the easier it is to show that the measure is necessary.[148] On the other hand, the more trade-restricting the measure is, the more difficult it is to show that it.[149]

In the literature there is a consensus that measures for reducing carbon emissions can be justified by Article XX(b).[150] However, it is important that the main purpose of the measure is precisely to protect the life or

[143] Panel Report, *China – Raw Materials (2012)*, para. 7.298.
[144] For more information, see IISD & Unep (2014), p. 44
[145] IISD & Unep (2014), p. 44.
[146] Appellate Body Report, *Brazil – Retreaded Tyres (2007)*, para. 178
[147] Appellate Body Report, *Brazil – Retreaded Tyres (2007)*, para. 178
[148] Van den Bossche & Zdouc (2017), p. 560.
[149] Ibid., p. 560.
[150] See e.g. Mehling et al (2019), p. 565

health of humans, animals or plants, rather than for competitive reasons, even though there is some room for considering such aspects as well.

As the panel showed in *China – Raw Materials (2012)*, for the BCA case, it would also be important for the measures to be included in a comprehensive legal framework to reduce carbon emissions within the EU. Including export rebates can, however, be problematic as this could be perceived as being introduced for competition reasons and less for environmental reasons.[151] In this context, it could also be of significance for the EU to show that great efforts to reduce carbon emissions are made within the union. This can include both current measures but also new stringent measures within the *European Green Deal,* such as the efforts for optimising ETS, phasing out free allocation and including more sectors in the ETS.

At the same time, the literature indicates that it can be difficult to prove that a BCA is necessary. It ought to be possible to prove that the measure can reduce carbon leakage to other countries outside the EU, and thereby reduce global emissions. At the same time, there should not exist less trade-restrictive alternative measures that could achieve the same goal. Although BCA is *most likely* the most effective unilateral way, it is not *completely established* that BCA is the most effective measure.[152] A less restrictive measure would be if all WTO Members could unite on global measures for reducing carbon emissions.

5.5.2 Measures relating to the conservation of exhaustible natural resources (Article XX(g) in GATT)

Paragraph (g) consists of a three-step test, which most importantly includes that the measure shall:

(i) concern *"conservation of exhaustible natural resources"*; and
(ii) be *"made effective in conjunction with"* restrictions on domestic production or consumption.[153]

Conservation of exhaustible natural resources

With respect to the first requirement, AB has established that the term "conservation" means "preservation of the environment, especially of natural resources".[154] Then, in *China – Rare Earth (2014)*, the panel found that the interpretation of the term should take into account the

[151] For more information and discussion on export rebates, see below in Section 6.8.
[152] For more on this, see Section 3.4.2.
[153] Van den Bossche & Zdouc (2017), p. 574.
[154] Appellate Body Report, *China – Raw Materials (2012),* para. 355.

"international law principles of sovereignty over natural resources and sustainable development", which provides states a relatively large room for discretionary use and exploitation of their natural resources based on the desired conservation and development needs.[155] The panel agreed with China that the term "conservation", is not limited to only "the preservation" of natural resources[156], but that the WTO Members themselves largely may determine the level of protection desired.[157]

However, the adoption of measures for preservation of natural resources needs to be done in accordance with international obligations. A balance needs to be struck between preservation and trade liberalisation, a WTO Member's sovereignty over natural resources and the right to sustainable development. The WTO adjudicating bodies have interpreted the exemption quite broadly, and with respect to, for instance, the concept "exhaustible natural resources", it is considered to cover both living and non-living natural resources.[158] Measures for reducing carbon emissions have also been considered covered by the concept.[159]

According to AB, the provision shall also be interpreted in an evolutionary manner, i.e. taking the current situation into consideration. With reference to objective of sustainable development in the WTO Agreement's preamble, AB considered in *US – Shrimp (1998)*, that the provision needs to be read in the light of "contemporary concerns of the community of nations about the protection and conservation of the environment".[160] In the case, AB also referred to "recent acknowledgment by the international community of the importance of concerted bilateral or multilateral action to protect living natural resources".[161] Particularly considering the great awareness around climate change and that more and more countries are announcing a climate emergency, the same could also be said to be the case for BCA. In the literature, there appears to be a consensus that measures for reducing carbon emissions should be covered by Article XX(g).[162]

The measures should "concern" conservation of natural resources

The requirement that the measure shall "concern" preservation of natural resources, require "a close and real" relation between the measure and

[155] Panel Report, *China – Rare Earth (2014),* para. 7.262–7.263 and para. 7.266.
[156] Ibid.*,* para. 7.266.
[157] Ibid.*,* para. 7.267.
[158] Van den Bossche & Zdouc (2017), s. 575.
[159] Panel Report, *Brazil – Taxation (2018)*.
[160] Appellate Body Report, *US – Shrimp (1998),* para. 129.
[161] Ibid.*,* para. 131.
[162] Pauwelyn (2012), p. 45.

the pursued policy goal.[163] It is considered sufficient for the measure be reasonably related to the goal pursued, but it may not be disproportionately wide in scope. Moreover, it is about both domestic and imported products being treated impartially and fairly in relation to domestic products with respect to conservation of natural resources (the so-called *even-handedness requirement*).[164]

All forms of BCA that are discussed within the EU must be considered to be designed such that they can reduce carbon leakage from the EU to the third country, and thus reduce the global emissions.

As long as all types of products and sectors are not covered, it is not likely that BCA can be considered to be disproportionately broad, rather the opposite, if they only cover the sectors that cause the most carbon emissions and have the greatest risk of carbon leakage. Paragraph (g) should thereby be possible to apply to justify BCA in its entirety, or in the parts, where the measure is considered to be in conflict with the substantive rules of the GATT.

5.5.3 Requirements in the introductory paragraph (the *chapeau*)

For a measure to be justified according to the exception in Article XX(g) in GATT, it is required that the measure also be applied in accordance with the introductory clauses, the *chapeau*. This requires that the measure is not applied in a way that would:

(i) constitute an arbitrary or unjustifiable discrimination,
(ii) between countries where the same conditions prevail, or
(iii) a disguised restriction on international trade.

The provision mainly aims to provide an expression for the *principle of good faith*, in a way that the exceptions are not abused or incorrectly used to protect domestic industries or economic interests.[165] As mentioned above, the requirements in the chapeau concern the application of the measures in practice and whether BCA results in emission reductions.[166] AB has established that the manner in which a measure is applied can often be revealed from the design, the architecture, and the revealing structure of the measure.[167]

When assessing BCA's compliance with the chapeau, it is necessary to look at the overall design of the measure. The climate motive could

[163] Appellate Body Report, *US – Shrimp (1998).*
[164] Tamiotti (2009), p. 108–109.
[165] Van den Bossche & Zdouc (2017), p. 594.
[166] Ibid., p. 593.
[167] See e.g. Appellate Body Report, EC – *Seal Products (2014)*, para. 5.302.

therefore be questioned if export rebates were included in BCA without demonstrating their clear climate purpose. Another example is if products were selected based on other criteria than the risk of carbon leakage alone. For more information on this, see Section 6.7.

In *US – Shrimp (1998)*, AB held that three elements need to exist in order to establish that there is an arbitrary or unjustifiable discrimination between countries where the same conditions prevail, namely:

(i) The application of the relevant measure results in *discrimination*,
(ii) The discrimination is *arbitrary* or *unjustified* in character, and
(iii) The discrimination must occur *between countries where the same conditions prevail*.[168]

The measure may not be discriminatory between countries where the same conditions prevail

With respect to the third requirement, AB has clarified that the different conditions of the different WTO Member countries must be considered.[169] Other countries cannot be required to adopt "essentially the same" regulatory measures that a country has adopted to achieve a certain political goal.[170] Rather, the conditions prevailing in the other member countries must be considered in a non-rigid and flexible way. The determining factor is whether the other country has adopted measures that are *comparable in effectiveness.*[171] Therefore, it is important that the EU, for a possible introduction of BCA, considers e.g. whether other countries have adopted other climate policy measures to ensure that producers of these countries are not unjustly affected.[172] When considering the different conditions prevailing in the different member countries, there may also be grounds to consider the economic development levels of the different countries in accordance with the principle of common but differentiated responsibility in the Paris Agreement and the need for special and differential treatment (SDT) for developing countries within the WTO.

It may not be arbitrary or unjustifiable discrimination

AB has, with respect to the arbitrary or unjustifiable discrimination, also determined, *inter alia*, the following important factors that can be of significance for the design of BCA:

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[168] Appellate Body Report, *US – Shrimp (1998)*, para. 150.
[169] Appellate Body Report, *US – Shrimp (1998)*, para. 164.
[170] Appellate Body Report, *US – Shrimp (1998)*, para. 164.
[171] Appellate Body Report, *US – Shrimp (Article 21.5 – Malaysia) (2001)*, para. 144.
[172] For more information, see Section 6.6.3.

- Before adopting unilateral measures, multilateral, plurilateral, or bilateral solutions with the purpose of reducing global carbon emissions should first be attempted, especially with respect to cross-border problems.[173]
- If unsuccessful, the possibility of concluding "cooperative arrangements" with concerned countries to reduce the administrative problems with respect to justification of discriminatory treatment, should be examined.[174]
- It is important that all countries that are affected are allowed to participate in the negotiations on a non-discriminatory basis.[175]
- The measures need to be applied in a fair and just manner that ensures a due process (so-called *due process* requirement), including, for example, matters of transparency and predictability, and the possibility for export countries to be heard and to respond to any arguments.[176]

The application of the measure may not constitute discrimination

With respect to the first point, some mean that the current discussions within UNFCCC and the Paris Agreement would potentially meet the criteria.[177] At the same time, these negotiations have not resulted in clear requirements on how much different countries should reduce their emissions. BCA would create a more concrete tool with the incentive for emission reductions. For the EU to be able to argue that the EU has at least tried to solve the problem of carbon leakage multilaterally, the EU could, within the WTO, initiate discussions on pricing carbon emissions for products and the removal of subsidies for fossil fuels. Moreover, with respect to the other items, the aim is primarily to ensure that the opinions of other countries are considered, so that the system does not become unnecessarily trade-restrictive. It would, for instance, be appropriate to consult with other countries on which emissions should be included, how they should be measured, and how other countries' climate measures should be considered.[178]

Disguised restriction of international trade

With respect to the requirement that the measure should not constitute a "disguised restriction" of international trade, the same types of

[173] Appellate Body Report, *US – Shrimp (1998)*, para. 166.
[174] Cf. Appellate Body Report, *US – Gasoline (1996)*, p. 27.
[175] Appellate Body Report, *US – Shrimp (1998)*, para. 169–172.
[176] From Mehling et al (2019), p. 468, with reference to Appellate Body Report, *US – Shrimp (1998)*, para. 180–181
[177] Ibid., p. 469.
[178] For more information, see chapter 9.

considerations that are relevant for determining whether the application of a certain measure corresponds to arbitrary or unjustified discrimination, may also be taken into account for the assessment of its occurrence. The main purpose of this provision is to avoid abuse or an illegitimate or unjustified use of the exceptions.[179]

5.6 Other legal routes ahead

If the legal options for introducing BCA described above were to be considered too questionable or uncertain, there are two other legal routes ahead. The first is to invoke the so-called *security exception*. The other is to apply for a so-called *waiver*.

5.6.1 The Security Exception (Article XXI(b) in GATT)

Article XXI(b) in GATT consists of the so-called *security exception*, which gives WTO Members the possibility to adopt measures that are in conflict with GATT that the Member considers necessary for the protection of its "essential security interests". It is clarified in the provision that it e.g. concerns measures that are adopted in time of war or other emergency in international relations.

In the first panel report adopted, that handled the issue[180], the panel held that the WTO Member that invokes the provision has a relatively large margin of discretion to decide what constitutes "time of war or other emergency in international relations". Considering the messages that the UN Climate Panel (IPCC) conveyed in scientific reports that rapid, far-reaching, unprecedented changes are required to limit global warming to 1.5 degrees, it cannot be ruled out that a panel would consider that the EU has met that requirement. Moreover, the European Parliament recently adopted a resolution on the climate policy emergency. It can, however, be politically sensitive to invoke the exception with respect to, *inter alia*, the US' invocation of the security exception to justify its aluminium and steel tariffs. This is therefore not something to be recommended as a first resort.

5.6.2 Waiver (Article IX:3 in the WTO agreement)

Another solution could be to apply for a waiver according to Article XVI:4 in the WTO Agreement. According to the provision, all WTO Members shall ensure that their laws, regulations and administrative procedures are in accordance with their obligations under the agreements. When a Member finds it difficult, or impossible, to fulfil the obligations

[179] Appellate Body Report, *US – Gasoline (1996)*, p. 25.
[180] Panel Report, *Russia – Measures Concerning Traffic in Transit (2019)*.

under the WTO Agreement, or according to any of the multilateral trade agreements, the Member can, however, apply to get an exemption from the problematic obligations through a waiver. These can be justified if there are *exceptional circumstances* (Article IX:3 in the WTO Agreement). If a BCA is considered important to save the climate, exceptional circumstances should reasonably be deemed to exist, and the EU should be able to apply for a waiver.

However, it may be difficult to have a waiver approved, as all decisions on waivers are, in practice, taken by consensus.[181]

5.7 Legal conclusions

BCA could be designed as a customs duty, a tax or an internal regulation

The Board assesses that it is fully possible to design a BCA in compliance with the rules of the WTO, but that the compliance depends on the specific details in how the instrument is designed.

There are mainly three legal alternatives for designing the BCA: a customs duty, a tax or an internal regulation. The Board assesses that it would be most appropriate for BCA to be designed as a tax or an internal regulation, since the EU cannot introduce any additional tariffs without breaking its bound tariff commitments. It is, however, uncertain whether a participation in EU ETS based on importers purchasing allowances can be equated with a tax. The third alternative, an internal regulation, is therefore the most natural alternative. The choice between these three alternative is mostly of importance to the possibility of including potential export rebates.

The BCA should be designed as non-discriminatory as possible

Regardless of whether a BCA is designed as a customs duty, tax or internal regulation, it needs to comply with the non-discrimination obligations in GATT, i.e. the prohibition against discrimination between import and domestic production or against discrimination between the different countries. Given the risk that trading partners may interpret the introduction of BCA as a protectionist measure, which could lead to countermeasures and disputes, it would be desirable if a BCA was designed to the greatest extent possible in accordance with the substantive rules in GATT.

[181] Van den Bossche & Zdouc (2017), p. 125.

BCA likely needs to be justified by the general exceptions in Article XX in GATT

A BCA designed to efficiently reduce carbon emissions means that deviations from the basic non-discrimination principles would probably still be necessary. Provided that these deviations can be clearly justified from a climate perspective and that they are also in other respect designed in accordance with the requirements set out in the environmental exception in Article XX(g) in GATT, the Board assesses that BCA could be designed in compliance with the rules of the WTO. In this context, it is important to look at the design of the instrument as a whole, ensuring that no part of the instrument makes the climate motive questionable. The climate motive could, for instance, be questioned if export rebates were included in BCA without showing a clear climate purpose or if products were chosen based on criteria other than the risk of carbon leakage. Implementing a BCA to protect the European competitiveness is not a legitimate purpose according to Article XX in GATT.

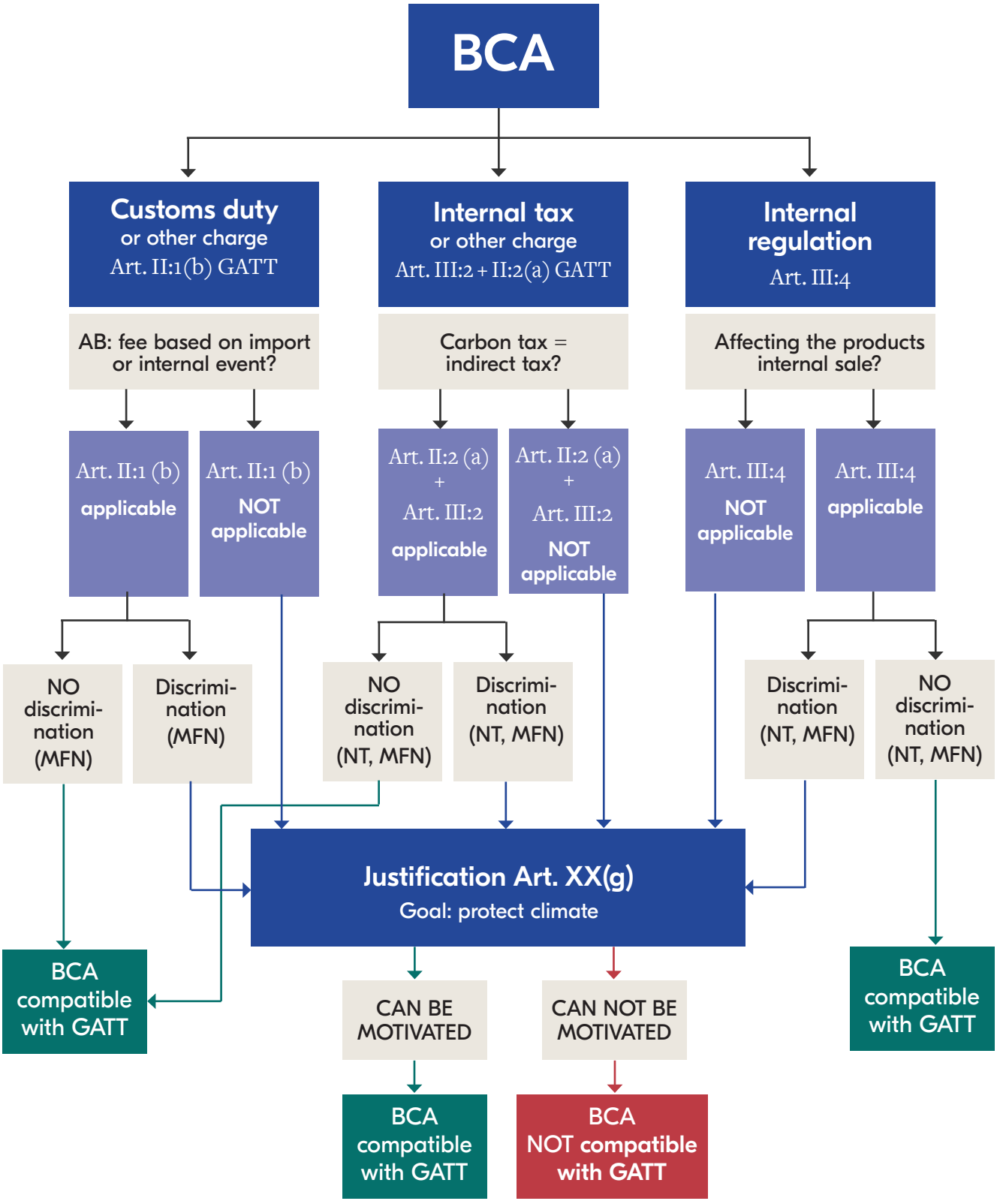
The Paris Agreement likely makes it easier to justify climate measures in the WTO

Given that the climate issue, now more than ever, is seen as one of the world's greatest challenges and that all the countries of the world are part of the Paris Agreement, the WTO agreements should reasonably be interpreted taking these goals into account. The concept of sustainable development has evolved into a guiding principle for the interpretation of the WTO agreements. If the BCA can clearly be shown to contribute to the goals of the Paris Agreement, it should simplify an assessment of BCA's compatibility with Article XX. Here, a clear change has occurred since the Board's previous report.

The security exception is an alternative but not recommended.

Although not recommended as a first choice, another alternative would be to invoke the so-called security exception, given that climate change by some countries and organizations is being considered as an emergency.

BCA's compliance with WTO law (GATT)



6 Design considerations for an effective BCA

In case a BCA is to be introduced, the instrument's design will determine the climate and trade effects. It is a challenge to design such an instrument so that the effect on emissions is as big as possible and at the same time does not create heavy administrative burden and thereby negative effects on trade. How the instrument can be designed is also affected by the rules that apply within the WTO, which have been described above.

A number of reports have analysed how a BCA can be designed in a WTO-compliant manner while balancing climate and trade aspects.[182] In order to create an effective BCA, a number of factors have to be considered from all these perspectives. Below, the most important factors and challenges are presented along with the Board's recommendation for managing these with the aim of creating a BCA that contributes to the greatest emission reduction and lowest impact on trade.

6.1 The purpose of BCA

In political discussions, it has sometimes been discussed whether BCA shall be used as a means to protect the domestic industry or as a lever in climate negotiations against countries that are not found to be doing enough or that threaten to leave the Paris Agreement, rather than using BCA only as a means to avoid carbon leakage.[183]

6.1.1 Recommendation

The primary purpose of introducing a BCA must be to reduce GHG emissions by preventing carbon leakage – not to protect European competitiveness. Implementing a BCA to protect the European competitiveness is not a legitimate purpose according to Article XX in GATT. Having climate action as the main objective is therefore a prerequisite for justifying a BCA based on the exceptions set out in WTO law.

6.2 Focus on sectors or countries?

One important question for the design of a BCA is whether the measure should be directed at selected countries that are deemed to have unambitious climate policies or if all countries should be covered by the regulation.

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[182] E.g. Mehling et al (2019), Cosbey et al (2019), National Board of Trade 2009 (2010).
[183] These goals can be very closely linked, as more ambitious multilateral commitments also reduce the risks of carbon leakage.

To avoid discrimination by law (so-called *de jure* discrimination) of like products from different countries, which would be in conflict with the MFN obligation in Article I in GATT,[184] and avoid problems of evasion through transhipment of products in certain countries,[185] the BCA should focus on selected products, regardless of their country of origin, rather than focusing on certain countries.

At the same time, even if BCA would be designed in a way that legally speaking does not discriminate like products from other countries by law, there is the risk of *de facto* discrimination. [186] For example, a de facto discrimination could occur if countries that have adopted ambitious climate policies would, in practice, be treated more favourably than countries without ambitious climate policies, as their industries and producers, to a large extent, would already have made the transition to cleaner production. In that case, the entire BCA instrument would need to be justified by the general exceptions s in Article XX of the GATT.

Despite the focus on product from selected sectors and that the BCA, in principle, should cover all countries, least developed countries should be exempted from the measure. This would be in line with the principle of common but differentiated responsibility (CBDR) in the Paris Agreement, and special and differential treatment (SDT) for developed countries within WTO.

For the application of the Article XX, it is important to consider the different conditions prevailing in the different WTO member countries. Therefore, it may be necessary to observe the different levels of economic development of the members, in accordance with the principle on CBDR in the Paris Agreement, as well as the special and differential treatment (SDT) for the developing countries within the WTO. At least, least developed countries should be exempted from the measure. How this can be designed in the best and most suitable way may, however, need to be examined further.

6.2.1 Recommendation

BCA should focus on selected products regardless of their origin and should not differentiate between countries based on their climate ambitions. Least developed countries should, however, not be covered by the regulation.

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[184] For more information, see section 5.3.3 above.
[185] These goals can be very closely linked, as more ambitious multilateral commitments also reduce the risk of carbon leakage.
[186] See Section 5.3.2.

6.3 Which products/sectors shall be included in the system?

One important question for the design of BCA is which products that should be covered by the measure. There are different alternatives for the selection of products. From a legal perspective it is, as discussed above, important that like products are treated equally. Imported products may not be treated less favourably than domestic products. On the other hand, products that are not like may be treated, taxed or charged differently.[187]

However, it is uncertain, but not excluded, that physically identical products can be considered not like due to different production methods. Should two seemingly identical steel products that have been manufactured differently, i.e. with production methods having released different amounts of carbon dioxide, be seen as like products or not? If not, and if it cannot be done on the basis of the principles of border tax adjustment, a difference in the taxation of products of the same kind needs to be justified according to the general exceptions of Article XX in GATT.

6.3.1 The first selection

One alternative is to include all imported products. Conclusions from research show, however, that if composite products are included in a BCA, the administrative costs would be significant, and the system would be very complex. This is because such a system would require emissions in each stage of the value chain to be measured, at the same time as potential climate policies of each country must be weighed in. Currently, this alternative is not considered viable. See figure 2 for the complexity of a composite product, in this example a car. The figure shows an example of the origin of different inputs to a car.

[187] For more information, see Section 5.4.

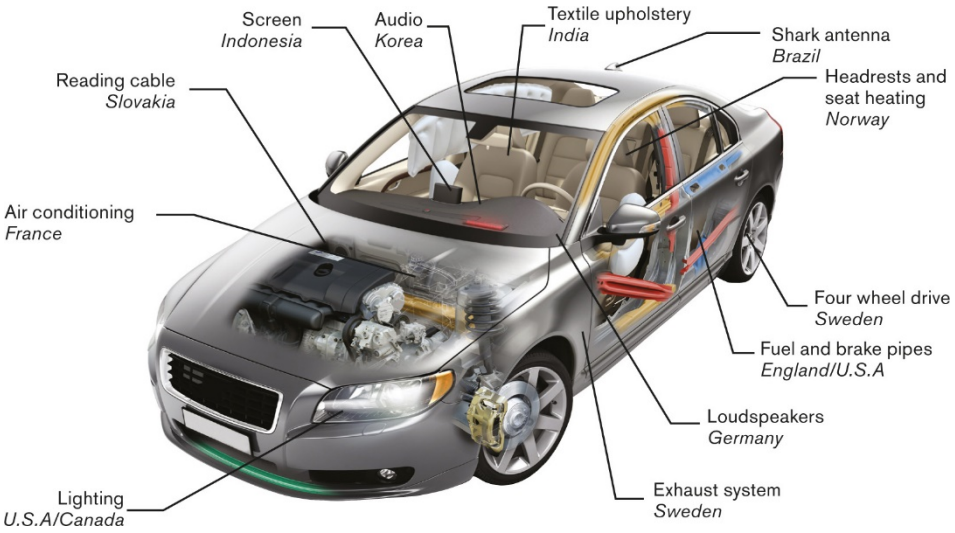

Figure 2. Example of inputs in a car

The other alternative is to focus on a narrower selection of products. To get the largest effect on emissions to the lowest administrative cost, a number of research articles have proposed that the products should be selected on the basis of two criteria:

- Firstly, the risk of carbon leakage, at present and in the future.[188]
- Secondly, the degree of complexity in the value chains that underlie the production of the product.

Since the purpose of a BCA should be to avoid carbon leakage and thereby also facilitate phasing out free allocation, the products that are covered by the regulation should also be limited to just the products determined as having the greatest risk of carbon leakage and those that get free allocation of allowances.

The proposals that were previously discussed at the EU level also focus primarily on the products that have the greatest risk of carbon leakage, have simple value chains, and at present receive free allowances. Such a focus would entail limited administrative costs while having a relatively significant effect on carbon emissions. Since such a choice would have a clear climate focus, it can also facilitate an assessment of whether the regulation conforms to the exception rules in GATT.

6.3.2 Second selection

The next decision would be whether all products that the EU assess to be at risk of carbon leakage should be covered by the regulation, or whether

[188] See discussion in Section 3.4.2 that emission allowances are potentially insufficient to cover free allocation in the future.

a narrower selection should be made. The products recommended by previous EU proposals and research studies are primarily those that belong to the energy-intensive and trade exposed industry (EITE industry). Products within these sectors conform to the established criteria and it is from those products the majority of emissions derive and they also currently receive free allowances within ETS.[189]

However, there is at present no study that has determined exactly where the limit should be drawn for when products should be covered by BCA.[190] A number of studies have singled out the cement sector, steel sector, and aluminium sector as suitable.[191] Also refineries, electricity, and some chemical products have been raised in the discussions.

In the proposals previously discussed on the EU level, there have been different focus areas, from proposals to include all products on the carbon leakage list to focus only on the cement sector.[192] The selection of products to be included should be based on clear criteria and methods for calculating the risks of carbon leakage.

Before a possible implementation of BCA, it is still possible for other products to be included. If the EU in the future should include more sectors in ETS, such as agriculture, these could potentially also be covered by the BCA.

6.3.3 The value chain perspective

Another important question to consider is whether the effects on the companies that use the material, i.e. the downstream actors, should be taken into consideration when deciding the products to be included. Upon implementing BCA, the cost of the products covered is likely to increase as producers must now pay for the emissions, while the cost for imported products also increases for the same reason. Even if this creates incentives for emission reductions and a more economically efficient use of these resources, there is a risk that downstream actors may be affected.

As an example, a car manufacturer who uses steel may be less competitive due to the input steel becoming more expensive within the EU. This can in turn lead to carbon leakage if these car manufacturers lose market shares or move production outside the EU, to a jurisdiction with lower climate standards.

[189] Marcantonini et al (2017).
[190] Cosbey et al (2019).
[191] See e.g. Mehling et al (2017).
[192] See Section 4.4.3.

For some products, such as cement, the problem is smaller, as those who use cement, for example construction companies, do not compete on the world market to the same extent (see additional reasoning on the downstream effects in Chapter 8.3).

6.3.4 Recommendation

BCA should include the products that have the greatest risk of carbon leakage and have simple value chains. Products within the basic materials sectors, for example steel, cement, and aluminium, should be best suited for inclusion. Exactly which products should be covered to achieve the greatest impact on emissions, which is technically feasible and does not create downstream leakage, should be further investigated.

6.4 How to measure third country production emissions?

To create a BCA and be able to calculate the fee to be paid upon import, information about the emissions that have occurred in the production of a product is required, both within the EU and in a third country. Here it is required that the scope of emissions to be included is determined, as products often cause emissions in several stages. In some sectors, the majority of the emissions come from the production process, (for instance, steel and cement) while the emissions from other sectors mainly come from the energy used as an input (e.g. aluminium). These emissions can be divided into three areas, so-called scopes.[193] *Scope 1* includes direct emissions from production, *scope 2* includes indirect emissions from energy use, such as electricity, and scope 3 includes emissions associated with other input, e.g. iron ore for steel production or emissions released in the generation of waste.

From a WTO legal perspective, it is important that imported products are not discriminated against domestic products, in conflict with the national treatment obligation. If a BCA would be considered as an internal tax or charge, the imported products may not be taxed or charged more ("*in excess"*) than domestic products. Moreover, it is the actual burden of taxation or charges that shall be compared. Using different measurement methods to circumvent this is not allowed. Should a BCA, on the other hand, be considered as an internal regulation, it would be sufficient that the imported products were not treated less favourably. In terms of requirements on equal treatment, the latter requirement is not as strict, but is still ultimately about treating products equally.[194]

[193] The terminology is based on the Greenhouse Gas Protocol.
[194]

6.4.1 The ideal method

The ideal method would be to use the *real* emissions that the products have caused, both from *scope 1* and *scope 2*, for the calculation of BCA. To use the actual emissions from the production creates fair conditions as more climate-friendly companies may pay less for exports to the EU than the dirtier companies. This may create incentives for emission reductions for companies in third countries, especially if exports to the EU is a major part of their total sales.

Only using the actual emissions is, however, not unproblematic. First of all, it would require that the measurement methods used in the emissions trading system comply with the way the emissions in the third country are measured. This applies both to the level of detail of the measurement methods and to the types of emissions that should be included. However, this can be solved. Second, all actors in the third country who want to export to the EU would be required to measure their emissions, which can lead to high costs and trade barriers. Even though more and more companies in the world have started measuring their emissions, far from all have secure and verifiable emission data, nor data on emissions that comply with the EU's standard of measurement. To require everyone to measure the real emissions would therefore most likely result in more burdensome requirements for importers or third country producers than domestic producers and thereby be non-compliant with the non-discrimination principles.

Article X:3 in GATT contains a provision that each WTO Member shall administer all its laws, regulations, decisions, and rulings with respect to, *inter alia*, taxes, fees and requirements or restrictions on imports in a consistent, impartial and reasonable way. If BCA would mean that imported products were imposed heavier administrative requirements than domestic products, this could be in conflict with the provision.

At the same time, as mentioned above, it must be noted that, according to the substantive rules of the GATT, regulations that lead to *de facto* discrimination are not allowed. If the measurement methods and the BCA were to be designed in such a way that domestic products are assessed to benefit from the measurement method, while the vast majority of imported products do not, this could constitute *de facto* discrimination. At the same time, it would be possible to justify this according to the general exceptions in Article XX in GATT.

6.4.2 Realistic methods

Given that requirements to measure actual emissions is probably not a realistic way forward, other solutions must be considered. One proposal discussed in the literature is for the country that implements BCA to set a *benchmark* for the emissions of the imported products.

The next question then becomes at what level the benchmark should be set. The solution presented in the four proposals regarding BCA that have been presented at the EU level is to set the benchmark at the level of the average emissions for the same product within the EU. To assume a uniform level of emissions regardless of the actual emissions, does not create any incentive for actors outside the EU to reduce their emissions, as they would all have to pay the same cost when exporting to the EU. One solution to this is, just as proposed in the three most recent proposals at the EU level, to supplement the benchmark with possibilities for exporters to show whether the emissions are lower than the benchmark set by the EU. This would mean that companies that have the same or higher emissions than the benchmark must pay in accordance with the benchmark, while companies that have lower emissions and can prove this, face a lower cost.

Setting the EU's average emissions for the same products as a benchmark, however, is not the only option. There are also possibilities to adopt other levels. The EU could, for example, set a benchmark that corresponds to the *global average emissions* for the product, or determine *different targets for each country*. Having different benchmark based on the country may, however, become complicated, as it is unclear if data for all the countries are available. Such a strategy would also likely violate the non-discrimination principles and potentially create a problem of transhipment of products to countries that have lower benchmarks.

Another alternative is to set a benchmark on par with the *dirtiest producers in the EU* (which is discussed in the French proposal). Setting a high benchmark would likely be considered by some countries as a punishment but would mean that more companies have the incentive to measure and report the actual emissions. Another alternative is to set a benchmark value on par with the cleanest producers in the EU. This would be less effective from a climate perspective, but would, at the same time, mean that fewer companies would need to report the actual emissions and thereby avoid that cost. This would probably also to a larger extent be accepted by the EU's trading partners.

One alternative proposed by different researchers is to introduce a form of hybrid system, where a uniform benchmark value is set for direct emissions (*scope 1*) while country-based, region-based or grid-based benchmark values are set for the indirect emissions (*scope 2*, primarily emissions from electricity consumption).[195] This can be justified with the fact that direct emissions are relatively uniform throughout the world, while emissions from electricity consumption differ considerably depending on whether the electricity is produced in a coal-fired power plant, nuclear power plant, or uses some renewable technology such as solar energy or hydroelectric power. To produce such values for *scope 2* would, however, require specific data for emissions from the electricity mix in these areas, which is challenging.

Basing targets on the emission levels of a country or of the electric grid in a certain region can also lead to problems of meeting the requirements of the MFN obligation. On the other hand, this could probably be justified by applying the general exceptions, as this is motivated by a clear environmental purpose.

Enabling producers in third countries to show if their emissions are lower than the benchmark values creates possibilities for the cleanest companies to have a lower cost and can potentially also contribute to more climate-friendly investments. However, this requires that producers in third countries produce data for the average emissions for each product in question. This could, for example, be achieved by calculating the average emissions per kg weight of the product. Such a solution would most likely also lead to a requirement from the EU that reported emissions must be verifiable and approved.

It is crucial for the efficiency of BCA that the cost of showing potential lower emissions is as low as possible. If the administrative cost is too high, there is a risk that exporters in third countries do not think it is worth showing real emissions, and thereby the incentives for emission reductions are reduced. To not contradict the above-mentioned non-discrimination principle in Article X:3 in GATT, the burden on third country producers should not be heavier than on domestic producers. One way to avoid conflicts and create as low transaction costs as possible is for the EU to provide countries and companies with financial and technical support for measuring and verifying emissions. The EU should also establish a transparent and simple system that creates opportunities for importers to easily calculate how much they should pay for the imported products.

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[195] Mehling et al (2019).

One challenge is that the method for calculating the emissions must largely conform with the methods used in the EU ETS and the methods that may be used in third countries with respect to the scope (for instance, *scope 1, scope 2*) but also with respect to the level of detail. The calculation method used in EU ETS is regulated by the MRV Regulation and is based on established methods.[196] Meanwhile, there is an international standard for the calculation of carbon emissions[197], and also several established industry standards,[198] which do not completely comply with the MRV Regulation. To keep the emission calculation and verification costs down for third country producers while ensuring that the calculation methods comply, the EU should examine the possibilities of allowing a certain flexibility in the calculation methods without resulting in significant differences in measuring the emissions.

To keep the costs of reporting actual emissions as low as possible, the EU should ensure that this can be done through an automated system, which would enable companies to record their verified emissions electronically so that calculations need not be redone for each delivery. This would simplify trade and create a flexible way to calculate costs to be paid by companies.

6.4.3 Recommendation

For BCA, *scope 1* (emissions from the production process) should always be included. Since *scope 2* (emissions from energy use, e.g. electricity) accounts for a large share of emissions for some products, this should also be included. Including *scope 2,* however, makes the system more complicated and the benefit of including these depend on which products that are included in the BCA. If the BCA primarily focuses on products where emissions occur in the production process and are not caused by electricity or purchased energy, the benefit of including *scope 2* is small. Including emissions from *scope 3* would create a far too complex system, why this should be excluded.

A benchmark value should be set for emissions that occur during production of products that are covered by BCA in order to enable continued export to the EU for all actors. If possible, a hybrid system should be introduced where uniform targets are set for *scope 1*, while varying values are set for *scope 2*.

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[196] Commission Regulation (EU) No 601/2012 of 21 June 2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council.
[197] ISO 1468:2018.
[198] For example GHG protocol.

The level of the benchmark can affect the climate effects of BCA. In accordance with the principle on national treatment, the safest alternative would be to set the target for *scope 1* for the imported goods at the level of the average emissions of a domestic producer of like products, or at the level of the cleanest domestic actors.[199] This way, a potential problem with *de facto* discrimination could also most likely be avoided, if producers in other countries generally emit more for like products. However, if third country actors generally have higher emissions than this level, this would lead to a smaller effect on carbon emissions, since fewer third country actors would have incentives to reduce their emissions. To create clear incentives for climate action, a higher value should be used. These different interests should therefore be considered. Provided that there is a clear climate purpose, a deviation from the principle of national treatment could likely be justified by Article XX in GATT.

There should also be a possibility for importers to show if the actual emissions that the products have caused are lower than the benchmark value. The system for showing the actual emissions should be made transparent and, if possible, consider established international standards in order to create as low costs as possible for calculation and verification of emissions.

6.5 Abolish or phase out free allocation?

A crucial question for the design of BCA is whether the free allocation of allowances should be removed in conjunction with the introduction of BCA or if the free allocation should be phased out over time as BCA is introduced.

In the proposals presented at the EU level, the free allocation of has been proposed to be preserved initially and then be phased out over time. The reason for this is to not create negative effects on competitiveness for actors who use the materials covered by BCA, and also to not get significant negative impact on the export of the covered products (see Chapter 7 for a more detailed discussion).

In order to comply with the principle of national treatment in Article III of GATT, the average free allowances received by EU actors per unit weight per product must be deducted from the calculation of the imported products' estimated emissions. If the EU determines a benchmark value in accordance with the average emissions of the product within the EU, an imported product would be subject to a fee corresponding to the value

[199] Cf. Hillman (2013), p. 8 and Pauwelyn (2012), p. 41.

of the number of allowances required to cover it, minus the allowances that are provided for free to EU producers for the production of the same product per unit weight. If *scope 2* emissions are included in BCA, any subsidies associated with electricity costs should also be phased out.

When the number of free allowances decrease over time, this should also be taken into account in the calculation of emissions caused by the imported products. When the free allocation has finally been phased out, this need not be corrected. The emissions of the imported products will then be assessed in accordance with the benchmark value or the actually reported emissions.

6.5.1 Recommendation

To achieve the maximum effect of BCA, the EU should phase out the free allocation when BCA is introduced. To avoid a too abrupt transition for the industrial sector, it should be investigated whether the phase out should be done over a period of time so that the industry has time to adapt to the new conditions. The free allowances that domestic producers have received must, during an eventual phasing out period, be deducted from the calculation of the imported products' estimated emissions.

6.6 What price?

Another important question for the design of a BCA is what price the imported products shall pay for each tonne of emissions they have caused. From a WTO legal perspective it is, as mentioned, important that imported products are not discriminated against domestic products.

6.6.1 Buying from ETS

Provided that information on the emissions that have occurred in the production of the concerned products is available, the only thing missing in order to calculate the total cost of the border adjustment measure is a price. If the EU had a common carbon tax for the current products, it would have been easy to levy the imported products with the same cost as the tax, but as the BCA regulation will most likely be linked to EU ETS, the price must reflect the price of allowances. The price of allowances fluctuates because the price depend on the supply and demand at the allowance market. To create the same conditions for products produced in the EU and imported products, the price that importers face must therefore follow the price development within the EU ETS. There are several ways to handle this. One way is for the importers to buy allowances on the same market as producers within the EU, i.e. the EU ETS. This would, however, mean that the demand for

allowances would increase considerably and disrupt the ordinary ETS market.

6.6.2 Create a parallel market for ETS

Another alternative is for importers to pay a fee that corresponds to the price of an allowance or buy an *allowance for importers* that is not part of the regular emissions trading market, but where the price reflects the price of emissions in the EU ETS. The French proposal of 2019 advocates such a solution, where the price of these *importers allowances* is proposed to be based on the price of a domestic allowance the day before the import took place. This would, however, impose requirements on the importers to buy these allowances at the same time as the import takes place.

Since the price of allowances fluctuates over the year, the requirements on importers to submit allowances should match the requirements on domestic producers, i.e. to submit the same number of allowances as the emissions they are responsible for on an annual basis. This way, importers are not required to buy allowances at a certain point in time; what is important is that they can show that they have submitted a sufficient number of allowances at the end of the ETS-year.

Another solution is for importers to pay a price that corresponds to the average price of allowances within the EU ETS within a certain time period (for instance, monthly or annually). Regardless of solution, the most important thing is that the conditions for importers are the same as the conditions for producers within the EU.

6.6.3 Deductions for already paid climate policy costs

Another important aspect that must be handled is that a number of countries in the world have priced carbon in different ways. To avoid double taxation, the BCA must allow adjustments for the costs that the third country producers already have had for the carbon emitted.

Therefore, one important question is which climate policies to include when assessing the carbon price. Should only adjustments for explicit carbon prices, such as carbon taxes and emissions trading systems be allowed? Or should adjustment of costs associated with fulfilling other types of requirements, such as emissions standards and requirements to use certain technology, also be allowed?

One way of handling this is to, as a starting point, enable deductions for third country policies that create explicit prices. As the EU's Emissions Trading System generates varying prices over the year, the method for

assessing the price of third country carbon emissions must conform to the way the price is assessed within the EU ETS.

However, this choice can be problematic if certain countries, for various reasons, have not chosen to reduce carbon emissions by explicitly pricing them, but instead, for instance, posing quantitative requirements on the amount of emissions a plant may have. The latter strategy does not result in an explicit price but is still costly for companies and creates an implicit price. If these policies are not included in the adjustment, some countries may feel unfairly treated as they, despite implementing a climate policy, face the BCA cost when exporting to the EU.

In the same way, countries may have taxes or measures that do not expressly target carbon but have a broader scope. One example is energy taxes, which aims to optimise energy use but can also be considered as an instrument that, at least partially, internalise the social costs of carbon.

Another example is that countries can have regulations that entail pricing but at the same time offer exemptions or subsidies to compensate for costs associated with the instrument. When designing BCA, decisions must be made on these aspects in order to avoid creating incorrect incentives, but also to ensure WTO compliance.

Since BCA will likely focus on products from all countries, exempting the least developed countries, it is probably not possible to consider carbon pricing of the different countries for the design of BCA. One way to enable deductions for already paid carbon prices is to handle deductions for pricing in the same way as adjustments of emissions. Thus, the imported products have to pay the ETS prices by default, but have the possibility to show if they have already paid a carbon price in the jurisdiction where the product was produced. For this to be approved, it is likely required that the EU receives verification on the domestic legislation that leads to the cost, and that the EU can review whether any exemptions or subsidies exist. The EU must ensure that such approval procedures are clear, fair, and effective.

To design the BCA in this way also enables managing climate policies available at the subnational level, e.g. states, which would be more difficult if exemptions were implemented for countries and were based on the origin of the products.

From a WTO legal perspective, treating countries differently based on their climate policies, would likely be in conflict with the MFN obligation. It should, however, be possible to justify by the general exceptions. For the application of the general exceptions in Article XX, it

is, as mentioned above,[200] important to consider that different conditions prevail in the different WTO member countries, and the climate policy measures that these have adopted. It is also not possible to require other countries to adopt exactly the same kinds of measures, rather only measures that are comparable in effectiveness. It is therefore important to provide a possibility for companies from countries with other climate policies than explicit pricing to also incorporate this upon export to the EU.

Exactly how this should be calculated should be analysed further. This is also a question which most presumably has to be discussed with affected countries in order for the *due process* requirements in Article XX to be considered fulfilled.[201]

If countries introduce the same pricing as the EU, the products imported to the EU would not face any cost. It is not unlikely that other jurisdictions might even introduce prices in the future that exceed the price in the EU. One important question is how BCA should manage this? Should the EU provide grants for import of such products? The likely solution in such a case is for these products to be imported without having to pay, but also not receive any compensation.

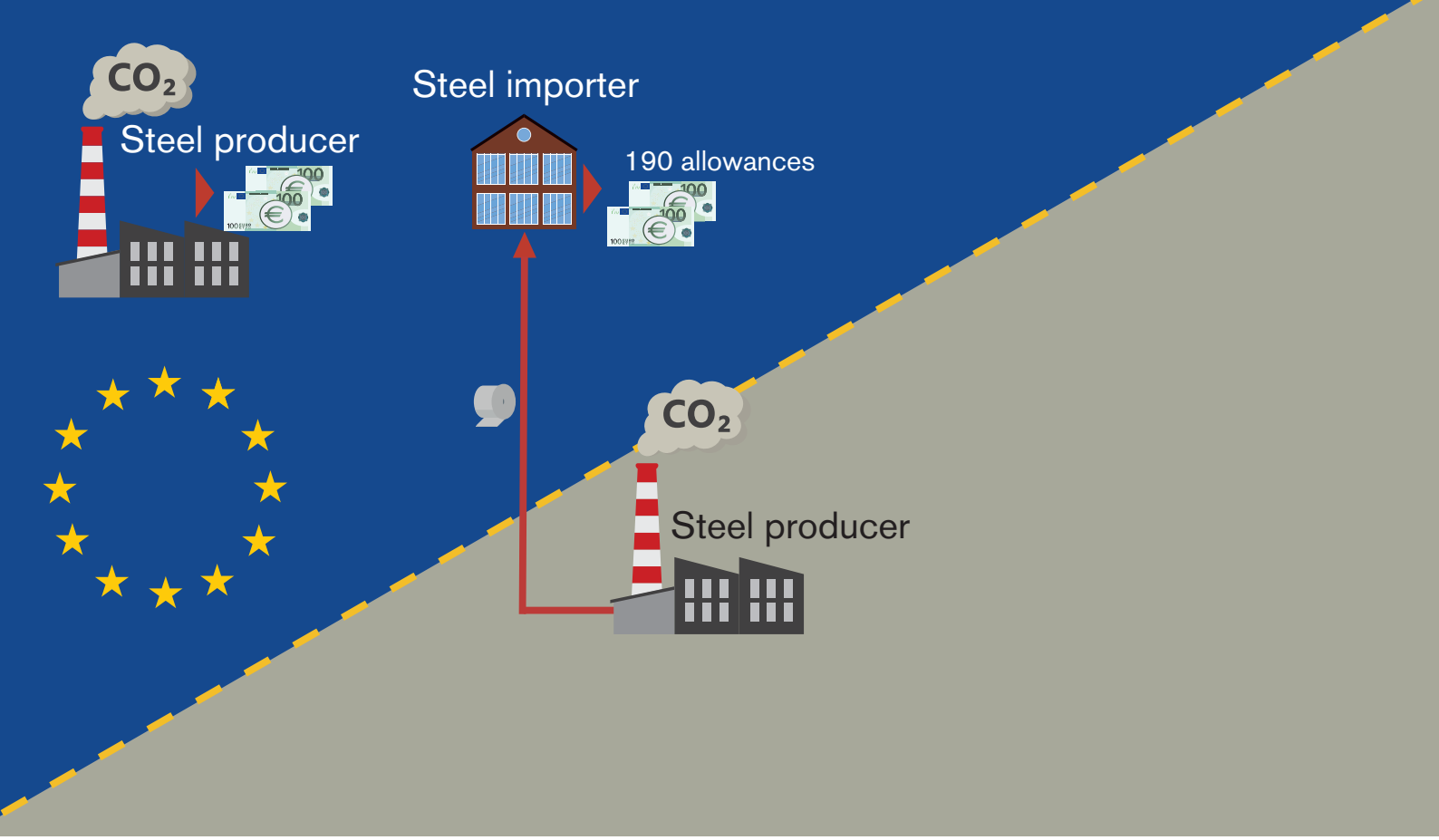
If other countries have an emissions trading system similar to the EU ETS, where the prices are similar, the benefit of BCA for products from these countries may also be called into question. The prices may be at similar levels but fluctuate over time. This could mean that only very small sums would be paid by the importers, while the requirements for the administrative parts remain. In that case, the administrative burden may exceed the benefit of this system. Especially if the other country also introduces its own BCA.

6.6.4 Recommendation

Imported products should pay the same price as domestic products in the EU for each tonne of carbon emissions emitted during production. The design of the system should, as far as possible, mimic the conditions that apply to domestic producers. With a model based on importers buying specific importers allowances, importers should, just as domestic producers, be able to submit these on an annual basis, if possible.

A BCA should include possibilities for products produced in third countries to make deductions for already paid carbon charges. Importers

should be provided the opportunity to show the costs that have been paid for emission reductions. Although practical reasons indicate that the deductions should primarily target regulations that lead to explicit prices, such as carbon taxes and obligation to buy allowances, it is crucial for the assessment of compliance with the exemptions that importers are given the opportunity for deduction for other types of climate regulations too. How this should be designed is an important question that must be investigated further.



A border carbon adjustment would most likely mean that the EU Emissions Trading System (ETS) is expanded to include emissions caused by imported goods. In order to describe the mechanism in a simplified way, we have chosen to;

- assume that the free emission allowances have been phased out
- only include scope 1 emissions
- only include imports
- use simple calculation examples. See chapter 6.7 for suggestions on exact calculation.

A steel producer in the EU must buy emission allowances. The number of allowances corresponds to the emissions caused during one year.

An EU steel importer must buy emission allowances corresponding to the emissions caused by the exporting producer in the country outside of the EU. In order to calculate how much an importer will pay, the EU decides on a benchmark for the emissions of the products. When the products are imported, the EU calculates the number of allowances and the cost of these.

Example

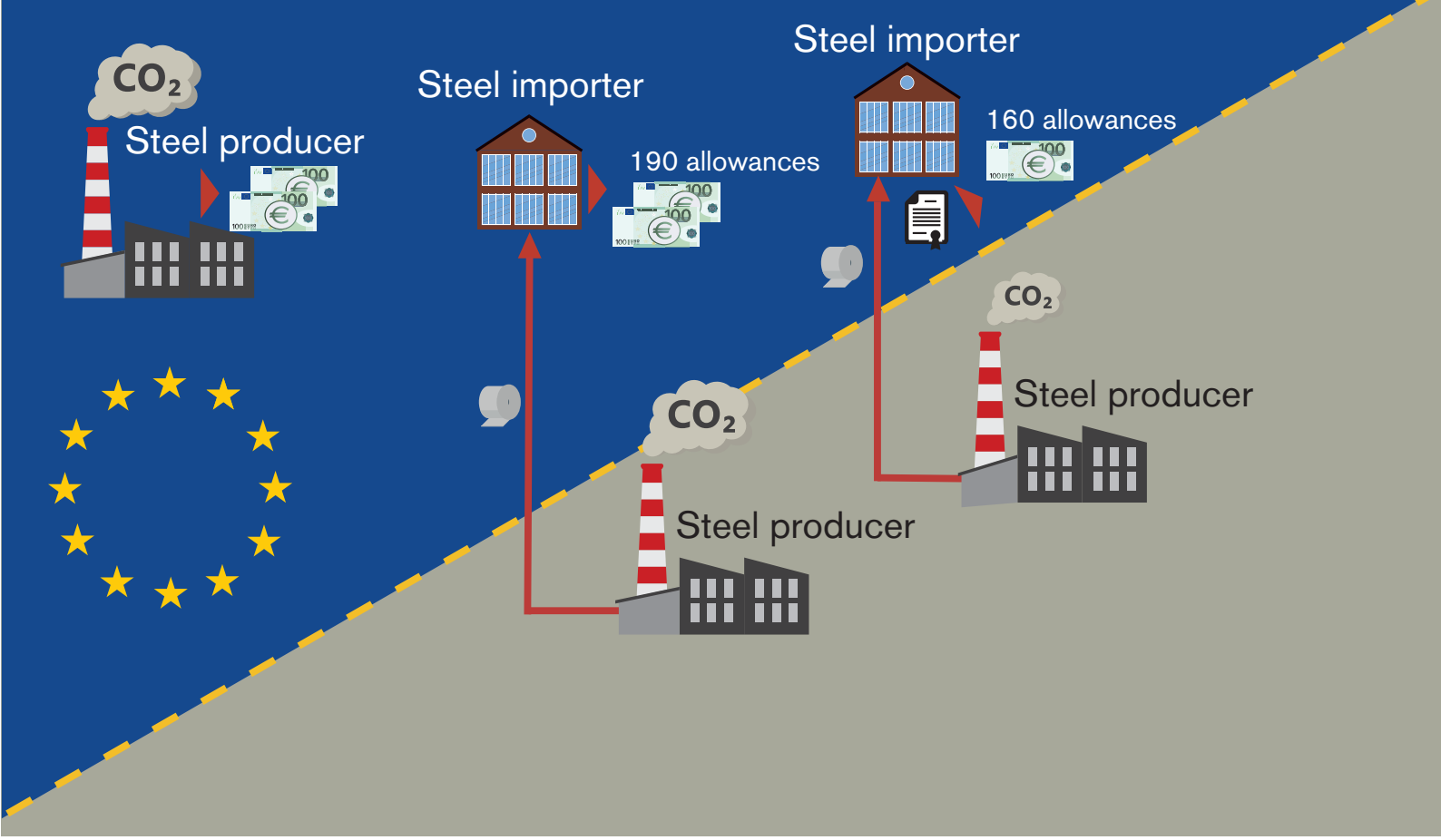
Simple calculation example

Imported weight: 100 tonnes
Emissions per unit of weight, benchmark: 1.9 tCO2eq /tonne steel
ETS price 25 euros

Number of allowances: 100 * 1.9 = 190 allowances

Cost: 190 * 25 = 4750 euros

However, for the system to be efficient and compliant with WTO rules, the BCA must take climate efforts made by other countries into account the work companies and countries outside of the EU do on climate. In order to pay less for the imported products, importers will be given the opportunity to present documentation of this.



Importers can show if emissions from the production have been lower than the EU benchmark and/or, for example, if a carbon tax has already been paid in the country of production.

Example

Simple calculation example

Emissions from the production have been lower than the EU benchmark and the exporting company has already paid a carbon tax.

Imported weight 100 tonnes
Emissions per unit of weight, benchmark: 1.9 tCO2eq /tonne steel
Actual emissions in country of production, per unit of weight 1.6 tCO2eq /tonne steel
ETS price 25 euros
Paid carbon tac in production country:
10 euros /tCO2eq

Number of allowances: 100 * 1.6 = 160 allowances

Cost: 160 * (25-10) = 2400 euros

6.7 Formula for carbon cost for imported products

The box below shows how the carbon cost for imported products could be calculated based on the above mentioned recommendations.

The calculation model for carbon cost charged for imported products could be formulated in the following way:

$$C_{BCA} = Q * \underbrace{\max[0; \min\{E_{EXT}; BM\} - S_{EU}]}_{\text{Total emissions that form the basis for the cost, expressed in the number of tonnes of } CO_2\text{-equivalents.}} * \underbrace{\max\{0; P_{EU} - P_{EXT}\}}_{\text{Price difference per tonne } CO_2\text{-equivalents.}}$$

Where

C_{BCA} is the total carbon cost for the imported product, expressed in Euros

Q is the quantity (weight) of the imported product

E_{EXT} are the actual emissions in the foreign country, per weight unit of the product. Here it is possible to include both process emissions (Scope 1) and indirect emissions (Scope 2).

BM are the adopted benchmark values for carbon intensity in foreign production. The benchmark values include the same type of emissions that are included in E_{EXT}

S_{EU} is the subsidy rate in the EU, i.e. the part of the production that EU producers receive support (cost recovery) for in the form of free allocation of allowances and any energy subsidies per weight unit.

P_{EU} resp. P_{EXT} is the explicit or, alternatively, the explicit and implicit carbon price (per tonne CO_2 equivalents) within the EU ETS and in the country where the imported product is produced.

Note that (1) the benchmark value (BM) constitutes a cap for emissions that the importer needs to pay for and (2) the price difference cannot be negative, even if the country where an imported product is produced applies a higher carbon price than EU ETS, and (3) if the real emission intensity in the foreign production is lower than the subsidy rate, we calculate using zero emissions (not negative emissions). Thus, the cost of BCA can never be negative.

Taken together, this means that the carbon cost *increases* with foreign emissions intensity (up to the benchmark value), *decreases* with the subsidy rate in the EU, and *increases* with the difference in carbon price between the EU and the rest of the world.

6.8 Deductions for export?

One important consideration in the design of a BCA is how to manage the EU's export of the products covered. Since the free allocation will be removed or reduced to finally be abolished when BCA is introduced, the costs of producing products that generate carbon emissions within the EU will increase.

A BCA means that a level playing field is created in the EU's internal market, as imported products must pay a carbon price on par with products produced within the EU. On the other hand, BCA will not create a level playing field with respect to carbon costs in markets outside the EU. Since the costs of carbon emissions for producers who previously received free allowances will possibly increase, the prices of these products may rise and thereby result in them being less competitive on the world market. This can in turn create a form of carbon leakage if a product produced in the EU is relatively clean and, as a result of the introduction of BCA, to a lesser extent is sold outside the EU. Then, total emissions in the world may increase, at least in the short term. If the EU has fewer opportunities to export to the world market, it may also be harmful for the EU economy, which in turn may create resistance against additional climate measures.

Therefore, it has been discussed whether BCA shall also include rebates for products that are exported. This could either occur by giving EU producers free allowances on par with the carbon emissions caused by exported products, or by providing these companies some form of support that corresponds to the carbon costs of the export. A potentially negative effect that can occur is that EU companies that mainly produce for export can get lower incentives for transitioning if such rebates are offered. However, this depends on the design of the system. Despite this, EU producers must still relate to the reduced amount of allowances in the ETS over time, which may still contribute to some emission reduction.

If the principles of border tax adjustment can be applied on BCA, i.e. if it could be equated with a tax or a similar charge, there would be legal possibilities to provide export rebates.[202] Border tax adjustments do not constitute prohibited subsidies, except if they are applied to export in excess of like products sold for domestic consumption.[203]

[202] For more information about this, see Section 5.2.2 above.
[203] For more information, see e.g. Tamiotti et al (2009), p. 104–105

Including export rebates could, however, potentially undermine a justification of perhaps not the entire, but at least parts, of BCA according to the general exceptions. The climate purpose of BCA could be questioned, if export rebates could incentivise export companies to release more carbon dioxide in the production of exported products. Should it, after all, turn out that export rebates would contribute to reduced emissions globally, the WTO-compliance of including these would depend on whether the BCA would be seen as an internal tax or a similar charge.

If the BCA were to be considered an internal regulation, export subsidies would not be allowed. They would constitute prohibited export subsidies. These can also not be justified by the general exceptions. The WTO's Agreement on subsidies and countervailing measures does not include any corresponding exception provisions and it is doubtful whether the provisions in GATT can be used.

It is difficult to assess the effects of including an export rebate would have on the overall global emissions, as it depends on the way the trade patterns are affected and the relative carbon intensity for products in the EU and in countries where they are potentially sold at the expense of EU products.

6.8.1 Recommendation

The Board has not been able to resolve whether a deduction for export *may* or *should* be implemented in connection with the introduction of BCA. There is considerable legal uncertainties surrounding the possibilities of implementing these. Even if export rebates could be justified from a trade and competitiveness perspective, the climate effects of incorporating them are not clear. If export rebates would be included, it should be possible to show a clear environmental purpose. Therefore, more thorough impact assessments are required on whether an export reduction can or should be included or if BCA should focus only on imports. Such an analysis should include how the global GHG emissions and the EU economy are affected by the various alternatives.

6.9 What to do with the revenues?

Apart from enabling complete auctioning of allowances within the EU, which generates major revenues compared to the free allocation, BCA will generate new revenue for the EU and the Member States. How should these revenues be used?

In order to create an as efficient system as possible, the EU should use parts of the revenues to finance the development and administration of the system. Revenues should also be used to assist with technical aid to companies that wish to measure, report, and verify their emissions. Incomes could also be earmarked for international climate measures, for example via the Green Climate Fund.

Earmarking funds for technical support and different climate measures could also facilitate a possible assessment of compliance with the exception provisions as this could underscore that BCA has a climate purpose.[204]

6.10 Trade facilitation

In order to ensure that the regulation can be introduced without too large negative consequences for the administrative procedures associated with import (such as increased administrative burden or increased transaction costs), it is important that the design of BCA also takes into account the requirements and conditions applicable in connection with the border passage of products. For all proposals of BCA, evaluations of the available possibilities are needed in order to establish a system that ensures that the administrative burden for companies and authorities does not increase more than absolutely necessary in order to achieve the goals of the measure and thereby cause as small cost increases as possible. Furthermore, the system must be possible to manage electronically.

This can, for instance, be done by calculating the fee or allowances that an importer has to pay automatically based on the custom code of the imported product (linked to the benchmark value for emissions) and weight. One challenge is to configure the automated calculations to factor in the possibilities for the importer to show lower emissions than the benchmark value and apply for deductions for carbon prices that have already been paid in the production country.

This study has not be able to specifically investigate which technical and practical options are available for designing such a system. In order to ensure that the form of BCA that will be introduced is cost effective and simple to use, and does not create unnecessary obstacles upon implementation, customs authorities and other concerned authorities must be involved in the design of the regulation.

[204] In the Appellate Body Report, *US – Shrimp (Article 21.5)*, AB considered that the fact that the United States offered technical assistance to third countries contributed to the measure not being considered a disguised restriction on international trade.

6.11 EU-legal ground

An important question related to the introduction of a BCA concerns the legal basis for the EU law instrument.

A BCA can either be introduced through an EU directive or regulation. The legal basis for such an instrument determines the procedure for the adoption of that instrument, primarily if it is subject to unanimity or to a qualified majority vote. In short, the Board considers three possible legal bases for a BCA:

- Environmental regulation according to Article 192.1 of the Treaty of the Functioning of the European Union (TFEU) (qualified majority),
- Tax regulation according to Article 113 TFEU (unanimity), and
- Trade policy instrument according to Article 207.2 TFEU (qualified majority).

Without knowing more about the design of the BCA, it is currently difficult to determine which legal basis could be relevant.

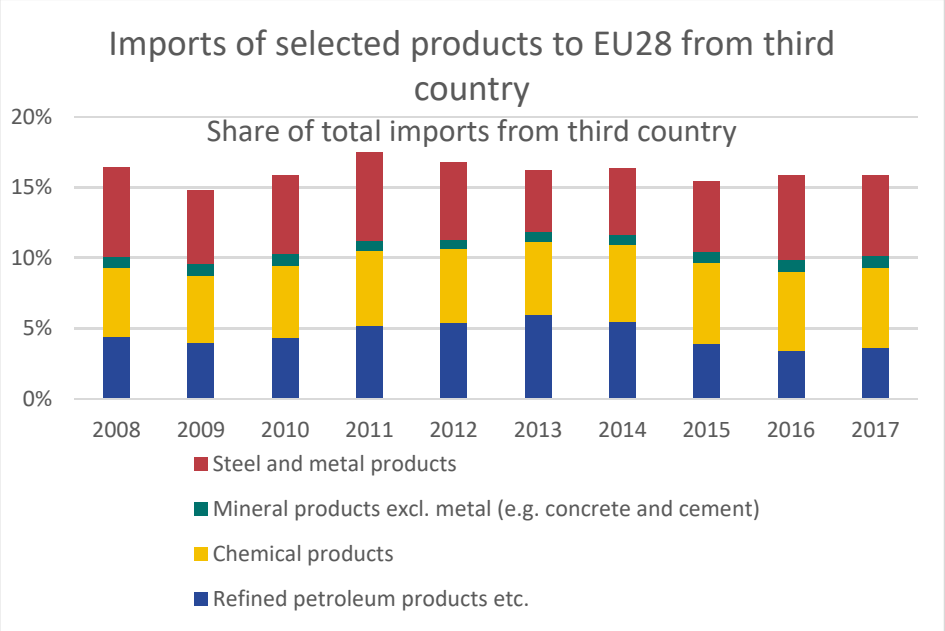
The Board's preliminary assessment, however, is that a BCA should be seen as an environmental regulation that supplements the existing EU ETS system (and that in turn is based on Article 192.1 TFEU) or possibly as a trade policy instrument as it exclusively concerns import from third countries. As far as we understand, Article 113 TFEU has been used as a legal basis for harmonising indirect taxes for products and services within the EU but has not in practice been used for measures that exclusively target third country products. Considering that a BCA and EU ETS complete each other and are two sides of the same coin, it would also be problematic to consider one as a fiscal measure and the other as an environmental regulation.

7 Trade statistics for concerned sectors

In order to understand the effects that an introduction of BCA may have on the EU's and Sweden's trade, trade statistics for the sectors that are most prevalent in discussions around BCA are presented below. The sectors include a total of about 85 subgroups. The products that would be included in a BCA would probably only consist of a selection of these. Since it has not yet been determined which products would be included in the system, we have instead chosen to present the sectors in their entirety. The statistics therefore show higher shares than those that would be covered by BCA, but can still give an indication as to how much of the trade these include.

7.1 Import shares

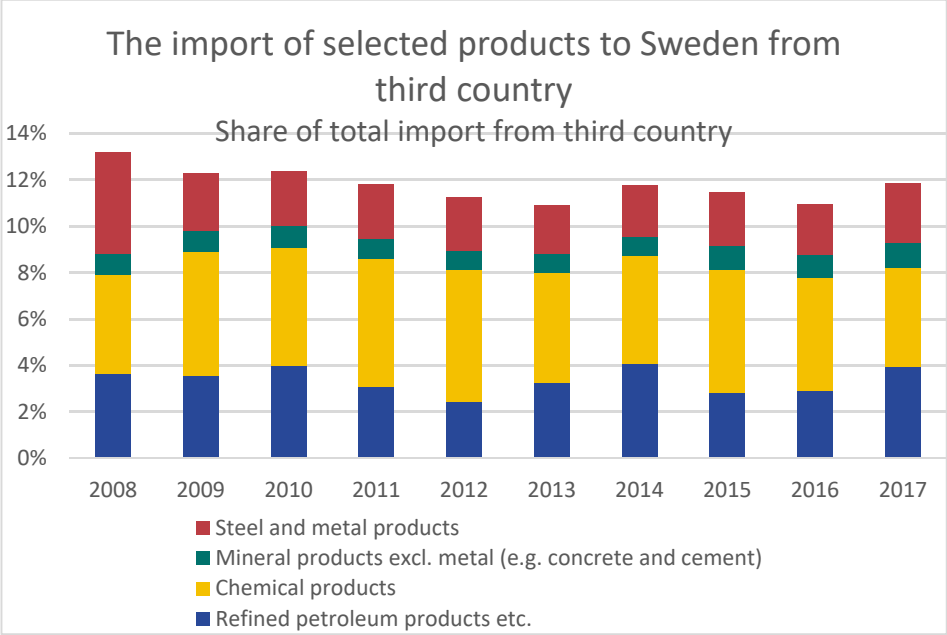
Diagram 1



Note: The industries are classified according to CPA2008, which corresponds to the Swedish SNI division of activities. The CPA codes used are: 19: Industry for hard coal products and refined petroleum products; 20: manufacturing of chemicals and chemical products; 23: Industry for other non-metallic mineral products; and 24: Steel and metal works.
Source: Eurostat Comext.

Diagram 1 shows the EU's import shares for some of these industries. Together, these constituted 16 percent of the total imports from countries outside the internal market in 2017. *Chemical products* and *steel and metal products* comprised the largest shares, 6 percent each. The industries' share has been relatively constant since 2008.

Diagram 2

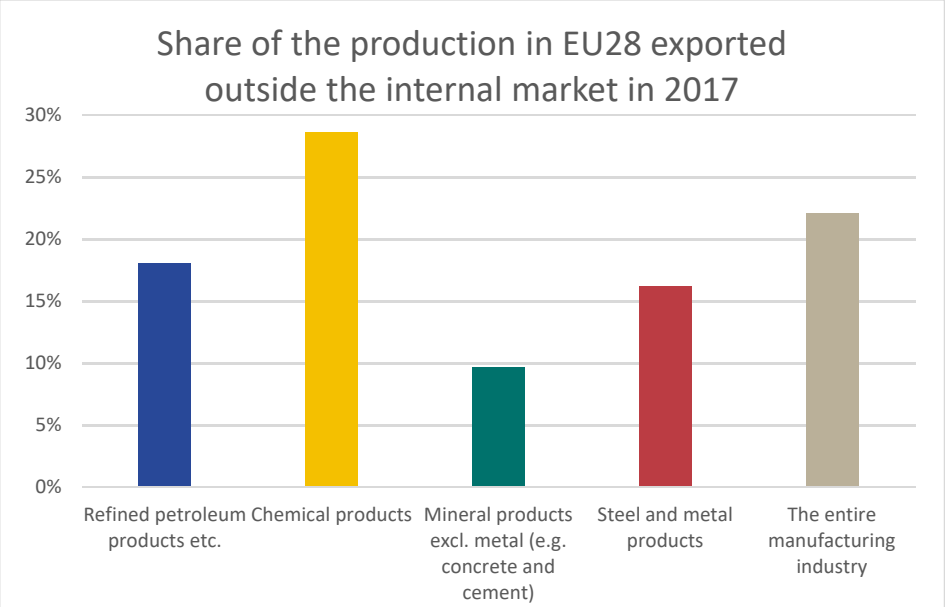


Note: The industries are classified according to CPA2008, which corresponds to the Swedish SNI classification of activities. The CPA codes used are: 19: Industry for hard coal products and refined petroleum products; 20: manufacturing of chemicals and chemical products; 23: Industry for other non-metallic mineral products; and 24: Steel and metal works.
Source: Eurostat Comext.

Diagram 2 shows Sweden's import shares for the selected industries. Together, they accounted for 12 percent of imports from countries outside the internal market in 2017, a small reduction compared to 2008. Seen over the last 10-year period, the shares have fluctuated between 11 and 13 percent. *Chemical products* and *refined petroleum products* constituted 4 percent each, followed by *steel and metal products* (3 percent) and *mineral products excluding metal* (1 percent).

7.2 The export share of the total production

Diagram 3

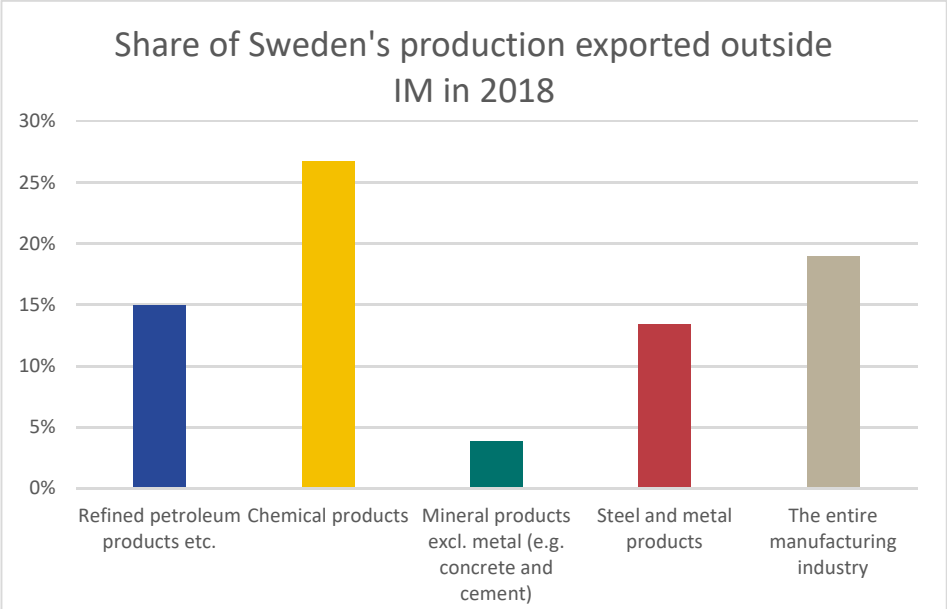


Note: The industries are classified according to CPA2008 in trade statistics and NACE rev2 in the production statistics. These match exactly down to the 4-digit level. Here the following 2-digitcodes are used: 19: Industry for hard coal and refined petroleum products; 20: manufacturing of chemicals and chemical products; 23: Industry for other non-metallic mineral products; and 24: Steel and metal works.
Sources: Eurostat Comext and Structural Business Statistics (SBS).

Diagram 3 shows the share of the total EU production within each industry that was exported outside the internal market in 2017. For the manufacturing industry as a whole, 22 percent of the production was exported to these countries. The chemical industry is one of the selected industries with the highest export share (29 percent), followed by the industry for refined petroleum products etc. (18 percent), and steel and metal products (16 percent). The industry for mineral products excluding metal, which includes, *inter alia*, cement production, exported 10 percent of their production to third countries, which was low in comparison.

The pattern is similar for Sweden according to the latest available statistics (diagram 4). The main difference is the export of other mineral products, which accounted for only 4 percent of the production.

Diagram 4



Note: The value for the industry for refined petroleum products etc. was retrieved from 2015. The industries are classified according to CPA2008 in trade statistics and NACE rev2 in production statistics. These match exactly down to the 4-stage level. Here, the following 2-stage codes are used: 19: Industry for hard coal and refined petroleum products; 20: Manufacturing of chemicals and chemical products; 23: Industry for other non-metallic mineral products; and 24: Steel and metal works.
Sources: Eurostat Comext and Structural Business Statistics (SBS).

7.3 From which countries are the products imported?

To understand which countries that may primarily be impacted by an introduction of BCA, Tables 2 and 3 show which countries that mainly export products from the selected sectors to the EU and Sweden respectively. It is clear that the import of these products is strongly concentrated to a few countries. At minimum, the five most important import countries combined account for 52 percent (steel and metal products) and at most 73 percent (refined petroleum products etc.) of EU imports from third countries. In Sweden's case, the concentration is generally even higher and the shares of the five most important import countries total just over 90 percent of the import from the industry for refined petroleum products etc. A number of these countries are also on the list of countries that emits most GHGs. The ambition levels for emission reductions within the framework of the Paris Agreement have also, for many of these countries, been deemed *critically insufficient* or *very insufficient.*[205]

[205] See the assessment of the countries' nationally determined contributions on e.g. https://climateactiontracker.org/

Table 2: EU28 largest import countries per sector 2018
Share of total import from countries outside the internal market within each sector

Rank	Mineral products excl. metal (e.g. concrete and cement)		Steel and metal products		Refined petroleum products etc.		Chemical products		The entire manufacturing industry	
1.	China	40 %	Russia	15 %	Russia	39 %	USA	24 %	China	28 %
2.	USA	17 %	USA	12 %	Saudi Arabia	13 %	China	15 %	USA	17 %
3.	Turkey	8 %	Canada	9 %	USA	12 %	Russia	7%	Turkey	5 %
4.	Japan	6 %	South Africa	8 %	United Arab Emirates	5 %	Japan	6 %	Japan	5 %
5.	India	5 %	China	8 %	India	4 %	South Korea	5 %	Russia	4 %
	Total	**76** %		**52**%		**73**%		**58**%		**60**%

Source: Eurostat Comext.

Table 3: Sweden's largest import countries per sector 2018
Share of total import from countries outside the internal market within each sector

Rank	Mineral products excl. metal (e.g. concrete and cement)		Steel and metal products		Refined petroleum products etc.		Chemical products		The entire manufacturing industry	
1.	China	53%	South Korea	12%	Russia	63%	Russia	38%	China	33%
2.	USA	10%	USA	12%		15%	USA	23%	USA	15%
3.	Turkey	9%	China	12%	Gabon	5%	China	9%	Russia	7%
4.	Japan	4%	Russia	12%	USA	4%	Malaysia	5%	Japan	6%
5.	Russia	3%	Turkey	8%	Oman	4%	Saudi Arabia	5%	Vietnam	5%
Total		**79%**		**56%**		**91%**		**80%**		**66%**

Source: Eurostat Comext

8 Potential effects on trade when implementing BCA

This section discusses how EU's international trade can be affected by the introduction of a BCA. Generally, all measures that entail additional administration at the border may be considered trade-restricting as they imply increased costs. Since BCA may entail increased administration for importers and companies that export to the EU, it risks impeding imports to the EU. The scope of the problem fundamentally depends on how the administrative systems are designed. In the following economic analysis, we disregard any trade-obstructing effects of increased administration upon import. Instead, we focus on the economic incentives for exporters and importers within and outside the EU.

It is important to consider that a long range of factors, other than carbon prices, play a role in a company's investment, localisation and trade decisions. Some of these are institutions, proximity to important markets, and supply of skills. Free trade agreements have also proven to be of great importance to trade flows between countries. None of these factors, however, change the basic incentive effects that BCA creates. Therefore, these factors are not specifically analysed but we treat them as given.

How the trade patterns are affected as a result of the introduction of BCA depends largely on how the instrument is designed. Some of the crucial aspects of how the trade patterns are affected are:

- which assumptions the EU make on third country emissions during production (the benchmark value)
- whether the European industry receives rebates for export, and
- whether the free allocation is phased out immediately or over time

The scenario analysed is that the free allocation is removed immediately when BCA is introduced. Moreover, the role of the benchmark and the consequences of introducing an export rebate are discussed.

8.1 Price and competitiveness effects for concerned products on the internal market

Whether a company needs to buy allowances or receives them through free allocation does not, in theory, make any difference for the companies' marginal cost, production decisions, or the price of their products. In other words, all companies covered by the EU ETS should already have internalised the cost of GHG emissions regardless of the situation. As described in Section 3.4.2, the design of the free allocation within the EU ETS, along with international competition, leads to the cost of allowances not having full impact on the product price. If the free allocation is removed and BCA is introduced simultaneously, it is therefore reasonable to expect that the price of the concerned products will rise within the EU. The cost of allowances, which will be the same for imported products as for the products produced domestically, is now reflected in the price. This also means that domestic products and imported products face the same conditions on the internal market.

Compared to today's situation, the measures may favour producers in the internal market, as these producers have internalised a part of the costs for allowances already. It also leads to the fact that European producers today, *ceteris paribus*, have higher costs than their third country competitors and thereby a competitive disadvantage. The empirical

research however shows that the negative effects on the EU's competitiveness as a result of the EU ETS have thus far been small. In some cases, there are even positive effects on the companies' financial situation. It is, however, likely that these observations largely depend on the fact that the price of allowances has been very low during the studied period and the free allocation has been quite generous. It is thus unclear as to how firms competitivenessin reality might be affected by the discussed measures compared to the present situation. This also makes it difficult to investigate the trade effects. Therefore, a thorough economic analysis of the concerned markets is needed, for example with the help of computable general equilibrium (CGE) models.

8.2 Effects for third country producers with different emission intensities

In Section 6.4, we discussed that the choice of benchmark, i.e. the emission intensity assumed for the production outside the internal market, is important for the climate benefits of BCA. The level of the benchmark may also have implications for trade, as some companies risk paying too much and others too little in relation to their actual emissions. Thereby, there is a risk of being discriminated against or favoured, respectively, with respect to their European competitors, who carry the entire cost of their emissions. If companies with cleaner production than the adopted benchmark only need to buy allowances for their actual emissions, the first risk is eliminated. Companies that, on the other hand, have higher emissions than the adopted benchmark, are more difficult to manage. Providing that they only need to pay for emissions up to the benchmark value, these companies are favoured in relation to producers on the internal market, as part of the bill for their actual emissions remains unpaid.

8.3 Effects on downstream producers

The price increases of products covered by BCA will also lead to price increases further down in the value chain. Here, there is a risk of disrupting competitiveness between the producers on the internal market and producers in third countries. For example, a producer on the internal market who uses steel in the production will have higher production costs, while the same does not apply to third country producers. The EU producers will therefore be less competitive.

Exactly what consequences this will have on production, consumption, and trade, depends on the possibility to transfer the increased costs to the consumer, i.e. the products' price sensitivity as well as the value added in the sector, i.e. the capacity to absorb higher costs. One possibility is that

the company reduces its profit instead of increasing the price of its product. In that case, trade patterns remain unchanged, but the company's capacity to make investments and, in the long run, its viability, changes. This alternative also presumes there is a profit margin to reduce – if not, it is necessary to raise prices in order for the company to be able to cover its costs. If a company chooses (or is forced) to increase the price of its products, it is likely that the demand shifts from the EU company to third country producers. This will lead to imports of the product increasing at the cost of European production. This also risks resulting in carbon leakage if imported products have emitted more than domestically produced products, or if European companies move their production to markets where inputs are cheaper instead of adjusting their production. As a result, important climate effects might be lost.

The consequences for these downstream sectors also depend on how much of their costs are attributable to products that are covered by BCA. Research shows that there are large differences between sectors. For example, doubling the price of concrete would, according to one study, result in a less than 1 percent increase of total construction costs.[206] In another study, the authors conclude that removing coal completely from steel manufacturing would likely not lead to an increase of more than 180 dollars for a car.[207] The same study notes, however, that the price impact on certain inputs could have significant consequences for downstream sectors.

8.4 Effects on export

With respect to export from the EU to third countries, the changes in competitiveness are potentially significant in the absence of an export rebate. As mentioned in Section 6.8, the BCA measures and the ETS system are initially only applicable on the internal market. The BCA does therefore not affect carbon prices in markets outside the EU. As a result, European companies competing with other actors in an external market become less competitive. This applies both to the products covered by BCA as well as the sectors that use these products as inputs in their production. The EU's export to third countries can therefore be expected to decrease as a result of the measures. The size of the export reduction is very difficult to assess, but the competitive disadvantage that the EU companies face justifies the question of whether they should be compensated at the border through a so-called export rebate.

[206] Rootzén & Johnsson (2016)
[207] Energy Transition Commission (2018)

If EU exporters of BCA-imposed products are exempted from buying allowances for the share of their production that leaves the internal market, their competitiveness in the global market is reset. These producers now face two potential markets with different prices: they can either choose to sell to the external market at the world market price, or to the internal market at a price that corresponds to the world market price plus the cost of allowances. In both cases, the company gets the same production cost recovery and therefore the company's incentive to sell to either market is not affected. Thus, the conditions for export companies within the EU are not altered compared to today.

An important question in the design of a potential export rebate is what products would be covered. From an economic perspective, there may be grounds for also including products further down in the value chain that are not directly covered a BCA, but are indirectly affected if the inputs become more expensive. It can, however, be an administratively and politically difficult route. This, too, requires extensive impact assessments of different alternative proposals.

8.5 Summary

The trade effects of the BCA measures discussed are complicated and very difficult to predict. The overall conclusion is therefore that in-depth analyses are required. Computable general equilibrium models could be used for this purpose.

Compared to the situation today, the introduction of BCA measures, along with the removal of free allocation, could favour European production compared to imported products in the first stage of the value chain. This picture is, however, complicated by the system of free allocation, which has protected and, on occasion, favoured parts of the industry in the internal market. The measures simultaneously create fair conditions on the internal market for imported and European-produced products with respect to the emissions they generate.

For products further down in the value chain, the opposite is true – here, EU producers lose competitiveness because they suffer costs that their international competitors do not. This applies both to the internal market as well as the export markets.

The EU's export of products covered by BCA can also be negatively affected by the measures. To minimise the negative effects for export companies in the EU, export rebates could be considered. Its exact design needs to be carefully investigated to ensure fair conditions while maintaining the desired incentives for transitioning to cleaner production.

9 Procedural issues

Aside from the purely WTO-legal factors, there are other aspects in relation to the WTO and the member countries in the organisation that should be considered.[208] They concern openness and clarity from the EU with respect to communication about the system. This also applies in relation to other international bodies and interested parties, not least the business community, which will be directly impacted by BCA.

9.1 Transparency linked to WTO

Before the introduction of a BCA, transparency toward other countries in WTO is central. The EU should openly explain its model in suitable forums in the WTO, such as, for example, the WTO Committee on Trade and Environment. There, the EU could initiate discussions on some of the most important issues for the design, *inter alia*, the different benchmark values that can be used for different products, and how different climate policies should be incorporated when deducting climate costs.

The purpose of such outreach would be:

- To signal the rest of the world that this will be introduced – both to provide companies with information so that they can apply this, and to encourage other countries to raise their climate ambitions.

- To examine the degree of resistance from other countries (and what countries), in order to be able to assess the risk of disputes and countermeasures.

- To receive constructive criticism and discuss this in order to change the system to make it more easily applicable in practice.

This should happen both before the system has been implemented and thereafter continuously when changes are made to it. The point is to be proactive and not wait for other actors in WTO to start criticising the system.

[208] For more information on this, see mainly Section 5.5 above.

10 Conclusions and recommendations

The purpose of this report has been to analyse trade-related aspects of BCA and assess possibilities for introduction of a BCA mechanism by the EU.

The analysis has shown that it is fully possible to design a BCA in accordance with the legal framework of the WTO and also to create a number of positive effects for the EU's possibility to achieve its climate goals. The analysis has also shown that the effects of a BCA on EU's international trade are difficult to determine, and largely depend on the design of the instrument.

A BCA can mainly contribute to increasing the EU's possibilities to price carbon effectively, which, compared to today's system, contributes to a stronger price signal for carbon emissions for consumers of the included products. A BCA also contributes to avoiding risks of future carbon leakage that may occur as a result of the lack of allowances available for free allocation in the future. Another advantage is that third country carbon emissions are priced to the extent their products end up in the EU. This can create an incentive for third country actors to reduce their emissions. This is especially true for companies that send a large share of their exports to the EU.

On the whole, this can lead to improved conditions for achieving the EU's and Sweden's climate goals in an efficient way and enable the EU and Sweden to do their part in achieving the goals of the Paris Agreement. A BCA should, however, not be considered a panacea, as it would likely only cover a limited range of products.

Even if it is fully possible to introduce a BCA in compliance with the legal framework of the WTO, one of the main disadvantages of the instrument is that the EU's trade partners could interpret the introduction of a BCA as a protectionist measure. This can potentially lead to countermeasures and disputes. The risks could, however, be reduced if the EU conducts a transparent process, and informs and consults other WTO members about the design of the measure before it is introduced. In this context, it would also be important to emphasise the climate purpose and the need of the measure to achieve the climate goals.

Another disadvantage of BCA is that the complexity around the design of the system risks generating high transaction costs. However, this can largely be managed by following the recommendations given in this report.

Based on this reports review and the knowledge available today, there are reasons to believe that a well-designed BCA can be a more efficient tool than the free allocation of allowances to prevent carbon leakage and contribute to reduced emissions within the EU. We have, however, not analysed and compared BCA with all the possible alternative unilateral solutions for carbon leakage. For Sweden to support the introduction of a BCA, or to recommend another instrument instead, all the advantages and disadvantages of the different tools must be weighed against each other.

The BCA proposals previously presented at the EU level, in particular the cement proposal and the French proposal of 2019, include solutions for many of the challenges around the design, which, to a large extent, are in line with the research on how an efficient BCA can be designed. These proposals also demand further evaluations and impact assessments of the most cumbersome elements. Based on what is indicated in the proposals, it is not possible to assess their compatibility with the WTO law in detail, since the compatibility to a large extent depend on the specific choices of the design. Of what is indicated, however, there is nothing in the proposal that clearly violates the WTO rules. It should be noted, that there is some uncertainty as to whether requirements to purchase allowances can be equated with a tax or similar charge, and whether the principle of border tax adjustment can be applied. Possibly, a BCA with requirements to purchase allowances would instead be assessed as an internal regulation. The matter is of significance for the question of whether export rebates can or cannot be included. If BCA is to be regarded as an internal regulation, it is not possible to include export rebates.

Given that the Commission’s president von der Leyen, in the European Green Deal, has announced that a proposal on BCA will be presented in 2021, we have, in this report, reached a number of conclusions and recommendations.

From a WTO legal perspective, it would be desirable if the BCA was designed in accordance with the substantive rules of the GATT to the greatest extent possible. This is primarily with respect to the risk that trading partners may interpret the introduction of BCA as a protectionist measure. However, a BCA designed to efficiently reduce carbon emissions would probably come in conflict with the non-discrimination obligations. Provided that these deviations can be clearly justified from a climate perspective and that they are also in other respect designed in accordance with the requirements of the environmental exception in Article XX(g) in GATT, the Board assesses that it is fully possible to

design a BCA that is in compliance with the rules of WTO, in particular the general exception provisions. The concept of sustainable development has also developed into a guiding principle for the interpretation of the WTO agreements. Given that the climate issue, now more than ever, is considered one of the world's greatest challenges and that all the countries of the world are part of the Paris Agreement, these goals should reasonably be taken into account while interpreting the WTO agreements. If the BCA can clearly be shown to contribute to the goals of the Paris Agreement, it should simplify an assessment of the BCA's compliance with Article XX.

For the application of Article XX, it is, however, important to look at the entirety of the measure's design, to ensure that no part of the instrument makes the climate motive questionable. The climate motive could, for instance, be questioned if export rebates were included in BCA without showing a clear climate purpose. Furthermore, it could also be questioned if products were selected based on other criteria than strictly the risk of carbon leakage. Moreover, it is important to take into account the conditions prevailing in other countries and the climate policy measures applied in the different WTO member countries, so that producers from these countries are not unfairly affected by a BCA.

Even if this is not something that is recommended as a first resort, another alternative would be to invoke to the so-called *security exception*, given that climate change by some countries and organisations has been declared as an emergency.

10.1 Design recommendations

With respect to the more specific choices for the design of BCA, the following recommendations are provided:

The purpose of BCA must be to prevent carbon leakage

The main purpose of a BCA must be that the instrument shall contribute to reduced GHG emissions by preventing carbon leakage. Starting from this objective alone is a prerequisite for making it possible to justify a BCA by the exceptions set out in the WTO's regulatory framework.

The choice of products should be kept narrow

The choice of products covered by BCA should, at least initially, be kept narrow and the focus should be on products most at risk of carbon leakage, and those with simple value chains. Some of the products that match these criteria are steel, aluminium, and cement. The effects on actors further down the value chain should also be taken into

consideration in order to avoid carbon leakage at this level. Exactly which products to include in order to achieve the greatest impact on emissions, while also ensuring that doing so is technically feasible and does not create downstream leakage, should be investigated further.

The focus should be on selected products regardless of origin

The BCA should be aimed at selected products regardless of origin and should not differentiate between countries based on their climate ambitions. However, the least developed countries should be exempted from the mechanism.

Emissions from the production process and energy consumption should be included

The BCA should include both direct emissions from the production process (*scope 1*) and, if practically possible, indirect emissions from energy consumption, for example electricity (*scope 2*). This recommendation presupposes that the BCA covers products that have significant emissions in both of these scopes.

A benchmark value for the average emissions of the selected products should be developed

A benchmark value for emissions caused during productions, per unit of weight of the products in question, should be developed. If possible, uniform benchmarks should be determined for emissions from the production process while varying benchmarks are used for indirect emissions. This makes it possible to calculate the total emissions of the import relatively easily. To ensure that EU producers and importers face the same conditions, any free allocation that EU producers have received shall be deducted from the assessed emissions of imported products. Also, any subsidies paid to EU producers that aim to cover increased costs of energy consumption should be removed.

The choice of benchmarks impacts the effect of a BCA. A relatively high benchmark, such as the global average emission of a product, would lead to greater emission reductions than a lower value that is, for example, based on the average emissions within the EU. The first would need to be justified by the exception clauses while the latter would be more compatible with the national treatment obligation. The choice of benchmarks will therefore be based on a trade-off between these two interests.

It should be possible to demonstrate if the emissions are lower than the benchmark

EU should allow importers to demonstrate whether the emissions associated with the production of imported products are lower than the set benchmark value. The calculation method for measuring the emissions should be in line with the calculation method in the EU ETS but should allow some flexibility for using international standards to keep the administrative costs down and to avoid discrimination.

The price per emission unit should be the same for producers inside and outside the EU

Emissions resulting from the production of products imported to the EU should be charged the same price per tonne as producers within the EU pay. The design of the system should, as far as possible, mimic the conditions that apply to domestic producers. For a model that is based on the obligation of importers to purchase specific allowances, the importers should, like domestic producers, be able to submit these on an annual basis.

It should be possible to deduct carbon dioxide fees that have already been paid outside the EU

Importers should have the opportunity to demonstrate whether the products have already been covered by a carbon pricing scheme in the country of production, and should be allowed to make deductions for it. To only allow deductions from direct carbon pricing, such as carbon taxes and emission trading systems, would be the simplest from a practical point of view. However, giving importers the opportunity to also deduce carbon costs from other types of climate policies, can be decisive for the assessment of compliance of a BCA with the GATT exceptions. How to take other country's climate policies into account in the BCA is an important question that must be investigated further.

The free allocation should be phased out

The EU should phase out the free allocation of allowances when a BCA-mechanism is introduced. This should be done over a period of time sufficient for the industry to adapt to the new conditions. The deductions made for free allocation when calculating emissions of imported products should decrease as the free allocation is phased out. This is required to ensure competitive neutrality and for the system to be compliant with the WTO legal framework.

Potential export rebates must be further investigated

The Board has not taken any position on whether a deduction for emission costs associated with the production of exported products *may* or *should* be introduced in connection with the introduction of a BCA-mechanism. There are considerable legal uncertainties regarding the possibilities of introducing these. The possibility depends primarily on whether or not the border tax adjustment principles can be applied to a BCA-mechanism. At the same time, including export rebates could also risk undermining a justification of, perhaps not the whole, but at least parts of, the BCA in accordance with Article XX in GATT. Even if export rebates could be justified from a trade and competitiveness perspective, the climate effects of incorporating these are unclear. Therefore, deeper impact assessments are required on whether an export rebate could or should be included or if a BCA-mechanism should solely focus on imports. Such an analysis should include how the global GHG emissions and the competitiveness of export companies are affected by the various alternatives.

Revenues should be used to reduce administrative burden and for climate action

The revenues from the BCA-mechanism should be used to finance the development and administration of the system. To facilitate the application of the GATT exception provisions, revenues can also be used to provide technical support to companies, especially in developing countries, who wish to measure, report, and verify their emissions. To emphasize that the BCA-mechanism has a clear environmental objective, the revenues could also be used for international climate measures (for example the Green Climate Fund).

The BCA must be designed to minimise the administrative burden related to imports

The EU has to ensure that the BCA is implemented without causing unnecessary administrative burden during the import of products. The system should be digital and based on automatic calculations that are predictable and transparent. The EU’s customs authorities and authorities responsible for ETS should be involved in the design to ensure that the system can be designed without creating unnecessary transaction costs.

Implementation of BCA has to be carried out through a transparent process

The implementation of BCA can be interpreted as a protectionist measure by trading partners. To reduce the risk of conflicts, the introduction of

BCA should be preceded by a transparent process within the WTO at the time of introduction and when making any changes to the system. Trade partners should be given the opportunity to comment on the design, measurement methods, and benchmark values. Such a process can contribute to make the design of a BCA less trade-restrictive, contribute to a more favourable assessment under Article XX in GATT, and counteract any potential trade conflicts.

10.2 Need for continued analyses

The analysis has identified a number of issues of significance with respect to the design of a BCA. These need to be analysed further to identify the most effective solutions.

- It should be investigated which products should be covered by BCA. Such an investigation should consider the recommendations given in this report and should include an analysis of potential effects on competitiveness on downstream users in EU.
- The measurement methods for carbon emissions that third country actors can use, and the process for how these can be approved and verified, should be further investigated.
- The EU should investigate if and how climate policies that do not create explicit prices for carbon emissions can be used to make deductions when exporting to the EU.
- The EU should investigate how BCA should be administered in practice in order to create as low transaction costs as possible.
- The legal possibilities and effects on carbon emissions and competitiveness of including export rebates, should be investigated further.

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