

Transition to a Low Carbon Future Series



# The Allocation of Emission Allowances Free of Charge:

## Legal and Economic Considerations



By Ingrid Jegou and Luca Rubini

ICTSD Global Platform on Climate Change, Trade and Sustainable Energy



International Centre for Trade  
and Sustainable Development

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## LIST OF ABBREVIATIONS AND ACRONYMS

ADA	Anti-Dumping Agreement
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
ERU	Emission Reduction Unit
ETS	Emissions Trading Scheme
EUA	European Union Allowance
GATT	General Agreement on Tariffs and Trade
HFC	Hydrofluorocarbon
JI	Joint Implementation
LDC	Least-Developed Country
NZ-ETS	New Zealand Emissions Trading Scheme
NZU	New Zealand Unit
PFC	Perfluorocarbon
PPP	Polluter Pays Principle
GHG	Greenhouse Gas
SCM	Subsidies and Countervailing Measures
SME	Small and Medium Sized Enterprises
SPS	Sanitary and Phytosanitary (Measures)
FSC	Foreign Sales Corporation
WTO	World Trade Organization

## FOREWORD

Countries are grappling with putting in place policies to effectively curb greenhouse gas emissions without compromising growth and economic development more than necessary. A model chosen by many and contemplated by a growing number of countries is emissions trading schemes. Such schemes generally involve a cap of overall carbon emissions, combined with emissions permits that can be traded among firms.

Particularly challenging for policy-makers when regulating emissions is how to handle an uneven playing field- if some countries put a price on carbon and others don't, there are concerns that the industry in the restrained economies would risk losing market shares and that emissions would simply move across the borders. One feature for handling these risks is to distribute emissions allowances free of charge. By doing so, the polluting industries are protected, at least initially, from the carbon cost, thereby reducing the risks for leakage. This also facilitates the smooth phasing in of the system, and provides time for the industry to adjust and restructure their energy function. Although allowances are distributed free of charge, they carry an opportunity cost. This signals to polluters that they will eventually have to pay for their emissions, thereby making them factor the carbon price into their production decisions.

Whereas hundreds of articles dwell on the more renowned policy tool for addressing carbon leakage, border measures, fairly little attention has to date been devoted to the practice of allocating emission allowances for free. Yet, a number of questions merit answers with respect to free allowances. In this paper, focus is on trade, and more specifically on whether free allowances could constitute a subsidy and as such distort trade and thereby be challenged under WTO-rules. From a sustainable development perspective, trade distortion in itself or, for that matter, non-compliance with current WTO-rules, should not constitute an impediment to the design of effective and efficient measures on climate change. However, we have chosen this paper's focus in the belief that these notions do offer a reference on the possible discriminatory, inequitable or otherwise perverse effects of any policy tool.

In addition to being less studied than border measures, the possible consequences of free allocation are less targeted- whereas countries imposing border measures would likely wish to target a few sectors and maybe even a few countries, thereby limiting their impact, a subsidy provided to the domestic industry would be capable of distorting competition on any market where the subsidised entities are represented. It would be difficult to shield developing country trade, either through the guiding principle of the UNFCCC, common but differentiated responsibility, or the practice of the WTO to grant developing countries special and differential treatment.

This paper is one first attempt of shedding light on some of these concerns. One of the findings of the paper is that different schemes may have very different impact, and thus legal status. Therefore, the authors recommend further research, possibly with a view to developing a best practice for emissions trading schemes so as to ensure that such schemes contribute to the overarching goal of sustainable development.

We invite you to read this paper and hope that it will stimulate thoughts and discussion. We very much welcome your feedback.



Ricardo Meléndez-Ortiz  
Chief Executive, ICTSD

## EXECUTIVE SUMMARY

Emissions trading schemes (ETSs) are policy tools designed to cut greenhouse gas emissions where this can be done in the most cost effective way. Existing and proposed schemes generally take the form of cap-and-trade systems, meaning that there is a political commitment to limit overall emissions by putting in place a cap, and that the emissions quotas allowed are distributed as permits between covered entities in the scheme, permits that can be traded freely. By doing this, firms that can curb emissions at a relatively low cost will do so, whereas firms with higher abatement costs will rather buy additional emissions permits.

It has become common practice to allocate the majority or all of the emission allowances to firms free of charge. There are a number of reasons for this. One is political; initially distributing allowances free of charge is a way of introducing the costs gently and to thereby gain political acceptance of the system before gradually moving into other modes of distribution, such as auctioning. The other primary reasons are related to concerns of carbon leakage and distortions in competitiveness. These concerns relate to the scenario where a carbon cost imposed domestically may undermine the competitive position of the domestic industry in such a way that market shares are lost to foreign firms, possibly through new investments. As a result, production, and its related emissions, move across the border. Carbon leakage is this increase of emissions in other regions due to the climate policy enacted domestically.

A subsidy can have world-wide effects, potentially undermining the competitive position of any firm competing in any market with the subsidized entities. Distortions in trade may negatively impact growth and economic development. Moreover, subsidies entail government spending that should be brought into the daylight and assessed so that taxpayers and constituencies can evaluate whether it is money well spent. The question investigated in this paper, from both an economic and a legal perspective, is therefore whether the practice of allocating emission allowances free of charge may constitute a subsidy and thereby distort international trade.

### The Economic Analysis

Even though the central question is whether free allowances can constitute a subsidy, it is of crucial importance to look more generally at the effects of free allowances, inter alia at incentives to reduce emissions and on carbon leakage.

#### What are the effects of free allowances on incentives to reduce emissions?

The basic idea with free allocation of allowances is that, irrespective of the means of allocation, emission allowances carry an *opportunity cost*. Thus, a firm using an allowance to account for its emissions loses the opportunity to sell the allowance at the current market price. This, in theory, creates an incentive for producers to reduce emissions, allowing them to sell their allowances.

However, it is difficult to apply theory to evidence. In practice, the capacity of free allowances to contribute to lowering emissions depends on a number of factors, such as the method for determining the amount of free allowances to be distributed to individual firms, the actual carbon cost, the type of cap and the level of the cap. Grandfathering, a too generous cap and, as a result, an insignificant carbon cost, are all factors contributing to undermining the intended incentives to reduce emissions. Even when there is an actual opportunity cost, this does not seem to be taken into account as real costs by firms; indeed, there is a tendency to pass through parts of the opportunity cost when possible, rather than to use the margin created by the free allowance to curb emissions.



However, in a longer perspective, it is possible that the mere existence of a carbon price puts pressure on industry to invest in efforts to reduce emissions. Indeed, in the current debate about climate change regulation, industries worldwide are increasingly expressing concerns that they may suffer from reduced competitiveness if their governments do not send clear signals of a political commitment to reduce greenhouse gas emissions.

#### **Do free allowances curb carbon leakage?**

If the incentives from free allowances to cut emissions are unclear, this intuitively has an effect for the ability of free allowances to reduce the risks for leakage. Indeed, if firms do not make as large efforts to curb their emissions as intended, a consequence must be that the risks of leakage are reduced.

Even when recognising the risks of leakage, free allowances will likely have little or no impact on leakage in the short term, at least in case of an absolute cap. The reason is again that firms will generally pass through the opportunity costs and thereby risk losing market share. However, as outlined above, this theory does not always hold and the effects in the long term are very unclear. Further, under output-based caps, carbon leakage could indeed be curbed, however, the environmental effectiveness of the policy will also be undermined.

#### **Can the allocation of free allowances be equivalent to a subsidy?**

There is no commonly agreed economic definition of a subsidy, which complicates any attempt to answer the question above. A common characteristic of tentative definitions is though that a subsidy confers a benefit to producers or consumers, which has been chosen as the basis for the economic analysis below.

An inherent characteristic of the free allocation of allowances is to improve the financial position of the recipients compared to a situation where they would have had to buy the allowances, and compared to firms not receiving the allowances free of charge. As a consequence, recipient firms will be in a better position to invest, and a stronger financial position will also tend to result in secondary benefits, such as lower costs of capital.

In addition to this general effect, there are certain ways in which the free allocation can be designed or implemented that can confer additional benefits to the producers, thus render the free allowances a subsidy. Many of these are in practice difficult to avoid.

First, there is a risk of over-compensation. This can happen in two distinct ways. First, if firms are allocated more allowances than they need to cover their emissions. The excess allowances can then be sold on the market. Such over-allocation is most likely in case of grandfathering. Second, it is possible that firms receiving allowances for free pass through the opportunity costs of these allowances, resulting in a net profit. These profits are referred to as windfall profits, and have under the EU-ETS been evident for example in the power sector. In both cases, firms would be able to make a profit through the allowances, without any actual requirements to abate emissions.

Policies related to new entrants and plant closures and how these cases are treated with respect to the free allocation of allowances can also amount to subsidies. Allocating allowances free of charge to new entrants can be considered an investment subsidy. Moreover, allocating free allowances in proportion to the carbon intensity of new entrants can undermine abatement incentives. As for plant closures, withholding the free allocation of allowances in case of plant closure turns the allocation into a subsidy to production, as firms only receive free allowances if



they (continue to) operate the installation. Naturally, incentives to keep inefficient installations running would not be beneficial for climate change.

Finally, differential free allocation between sectors may create distortions in competition. It has been shown in the EU-ETS, that free allowances have been distributed unevenly between different sectors in different countries. This could in principle lead to firms in the same sector competing on different terms and conditions, something that could be equivalent to a subsidy and possibly distort trade among them. This may lead to concerns that trade with competitors in third countries could also be distorted, something that would need to be examined further.

#### **What does it mean when the free allocation amounts to a subsidy?**

Subsidies are problematic in many ways. Often they are inefficient, expensive, socially inequitable and environmentally harmful, and impose a burden on government budgets and taxpayers. Moreover, they are able to distort any market in which the subsidized firm operates. Distortions in international trade will reduce the opportunity of trade to contribute to economic growth and sustainable development. Therefore, it is crucial that policy measures intervening on the international level be well-designed and targeted, so as to address the aims in an efficient manner while reducing adverse effects.

In the case of free allowances, it has been shown that their environmental effectiveness is unclear. Indeed, free allowances risk reducing the environmental benefits of an emissions trading scheme compared to if polluters were required to pay for their allowances.

With respect to international trade and competition, it is difficult to say what the effects of free allowances could be. At this early stage of climate change regulation, there is little empirical evidence. Complicating the assessment of the effects on trade is the fact that the very aim of these free allowances is to prevent changes in trade patterns so as to curb carbon leakage.

If the practice of allocating emission allowances free of charge would prove to be capable of influencing competition between firms receiving respective not receiving free allowances, as the analysis above indicates, then it is possible that the implications for third countries would be quite broad. In the case of border measures, the main alternative to free allowances for mitigating carbon leakage concerns, regulators would likely wish to target the exports from a few, big-emitting economies within a few sectors. Subsidies in the form of free allowances would on the contrary be less selective, as they could potentially impact production decisions, prices, and the competitive position of the domestic industry. This could potentially have an impact on competitors in all trading partners, importers as well as exporters, including developing countries.

It naturally also depends on which element of the free allocation amounts to a subsidy. One thing is very clear however; the recorded windfall profits are of such a magnitude that they must impact international competition, and thereby trade.

#### **The Legal Analysis**

The economic analysis paves the way to the legal analysis. Although there is no full overlap between the economic and legal definition of a subsidy, clearly the findings of the economic enquiry should inform the interpretation of the legal definition. The starting point of the legal analysis is Article 1 of the World Trade Organization (WTO) Agreement on Subsidies and Countervailing Measures (SCM), which defines a subsidy. A subsidy is deemed to exist if there is, first, a financial contribution by the government (in one of the specific forms indicated) or any form of governmental income or price support liable to impact trade, and second, a benefit is thereby conferred.

### **Is the allocation of allowances free of charge a subsidy under WTO-law?**

The free allocation of allowances may be considered as involving the foregoing of government revenue otherwise due, a provision of goods or services (both are forms of a financial contribution by the government), or a form of income support. This first type of subsidization involves the most extensive analysis, as it requires the identification of the 'otherwise due' benchmark. It is not sufficient to rely on the consideration that the government could in principle have charged for the use of its resources (which is in essence what happens with free emission allowances). The core of the legal analysis centres around the identification of an appropriate and precise point of reference in respect of which the allocation of allowances free of charge would be an exception or deviation. After accepting that there are no, as of now, international standards providing for an obligation to introduce an ETS and, even less, to charge for the emission allowances, the focus must shift to general principles like the polluter pays principle (PPP) or to the actual legal framework present in the country under examination. Both can provide the desired benchmark and enable to conclude that the lack of auctioning does indeed represent a derogation from the otherwise applicable norm and thus constitutes a foregoing of revenue otherwise due.

The alternative form of financial contribution, the provision of goods or services, could also come into play, since allowances can be considered both goods, inasmuch as they have economic value and can be traded, and financial services, as their free allocation involves a transfer of a security.

Finally, the free allocation of allowances may also be considered a form of income support, a rather unexplored limb of the definition of a subsidy with a significant potential.

The analysis then shifts to establishing whether free allowances may confer a benefit. The essence of the benefit conferred by free allowances would derive from the fact that the recipient firms do not pay what should be paid, whether what they should have paid is considered a price, a tax or compensation for damage to the environment. At the operational level, this requires the identification of the appropriate benchmark which may not always be easy, particularly when the allocation is considered a provision of goods or services. In that case, it is necessary to properly identify the market scenario which should represent the baseline against which to determine the existence of a benefit. Various practical difficulties can be identified. Due to the still recent and rare nature of ETSs, reliable data may not be duly available, requiring the use of hypothetical standards.

Further, the decision to distribute allowances free of charge is closely linked to various policy objectives pursued by governments, most notably competitiveness and carbon leakage concerns. It is however doubtful that these considerations can come into play at the level of the determination of the existence of a benefit. The simple fact that the free allocation might be indicative of distortions in the market is sufficient to establish the benefit's existence. The economic consideration that the allocation actually corrects a distortion, for example in terms of redressing a competitiveness handicap, is not relevant at this stage of the analysis, but can be considered at the subsequent level of a possible legal justification. This conclusion is more generally linked to the need to keep scope and justification separate in subsidy law. The legal, institutional and constitutional implications of the distinction are many and important.

The economic analysis has exposed various elements of economic advantage of free allocation that may become relevant for the legal analysis. This is the case for the improvement of the financial position of the recipient and for over-compensation in terms of allowances freely allocated. By contrast, the extension of free allocation of allowances to new entrants or its withdrawal from closing plants, which may respectively be looked at as investment and production subsidies, do

not come into play as such in the legal analysis, which scrutinizes only and more radically the very fact that the allocation is free.

#### **Is the free allocation specific and does it cause adverse effects or injury?**

When it is found that the allocation of allowances free of charge constitutes a subsidy under Article 1 of the SCM Agreement, the next step is to assess if that subsidy is also specific. In order for a subsidy to be subject to WTO scrutiny, it needs to be specific to certain enterprises or sectors. Here, the blurry and expansive nature of the specificity test, coupled with the distinct factual pattern of carbon emissions, causing mainly certain energy-intensive industries to benefit from the free allocation, seems to lead to the conclusion that, if amounting to a subsidy, the free allocation of allowances would also be specific under Article 2 of the SCM Agreement. Arguments based on the objective and neutral criteria used to determine which sectors would receive allowances free of charge do not seem able to defeat the factual consideration that the subsidy is predominantly used by certain sectors and that there is thus a concentration of a large part of the subsidy.

The following step of the examination is to consider whether the still unclear economic impacts of free allowances meet the specific legal requirements of the tests of adverse effects and injury, which, if met, ultimately render the subsidy actionable or countervailable. As indicated by the economic analysis, the empirical indications of the economic effects of free allowances on international trade and competition are still unclear, particularly in the long term. Any definitive legal assessment under the various tests of serious prejudice, nullification and impairment of benefits and injury, can only be carried out on a case-by-case basis, and when an empirical investigation has been performed.

#### **Is there a legal justification for the assumed subsidy?**

The conclusion that the free allocation of allowances may, under certain conditions, constitute a subsidy under WTO law, and an objectionable one, does not constitute the end of the legal analysis. The public policy objectives which are put forward in support of free allocation, mainly competitiveness and carbon leakage concerns, lead to enquire the existence or desirability of a legal justification.

The SCM Agreement does not provide any direct basis for justification since the category of non-actionable subsidies under Article 8, which included a limited environmental exception, lapsed in 1999. The attention then shifts to a legal question of huge systemic relevance; the applicability of the general exceptions of Article XX of the General Agreement on Tariffs and Trade (GATT) to subsidies adopted to fight climate change, in the present case free allowances. The issue is still open and increasingly topical, and the case law does not provide clear and univocal indications. However, an analysis of the legal issue, and more particularly, of the exceptions under paragraphs (b) and (g) and the chapeau of Article XX, shows that this provision may well apply to subsidies. There are no fundamental legal or technical obstacles to this hermeneutic result, which may also be desirable policy-wise if it is concluded that there is a lacuna in the system inasmuch as climate change subsidies could not be justified where other, admittedly more-distorting measures, could benefit from the shelter of Article XX. It needs to be acknowledged that leaving the solution of the problem to the compulsory jurisdiction of the Appellate Body may put the WTO dispute settlement system under considerable strain and could end up being politically troublesome. However, a judicial decision may function as a catalyzer of political impulses leading towards law reform.

The available options for law reform are numerous, and include a temporary waiver, a plurilateral agreement within or outside the WTO, and a revamped subsidy discipline in the SCM Agreement

or as part of a more general WTO Energy Framework Agreement. Whatever the solution, three main principles should guide a prospective justification that would combine environmental and competitiveness concerns with *realpolitik*. First, it should be expressly recognized that auctioning is the rule and free allocation the exception. This would provide a necessary principle of interpretation as well as a useful benchmark for the subsidy analysis. Second, the balance underlying the justification and its conditions should be informed by the principle of sustainable development and the polluter pays principle. Third, in light of their exceptional character, the justifications should be temporary and carefully designed, with the provision for the free allocation of allowances (competitiveness and carbon leakage) properly defined and substantiated.

## Conclusions

It would be fair to conclude from the analysis in this paper that the allocation of free allowances under ETSs is problematic, both from an economic and a legal perspective. From an economic perspective, free allowances, as such and certain elements of their allocation, can constitute a subsidy, thereby being able to affect any market in which the subsidized entities operate. No trading partners can be exempt from the effects of subsidies; there would in other words be no room for more favourable treatment of developing countries, as required by the United Framework Convention on Climate Change and the general practice in the World Trade Organization.

From a legal perspective, it is clear that free allowances could constitute a subsidy under WTO law. It is thus possible that the allocation of allowances free of charge would in the future be officially scrutinized by the WTO dispute settlement system.

In general, taking into account the fact that the allocation of free allowances is becoming common practice, and the possible effects of such allocation, it is necessary that more empirical analysis is performed and that this issue is featured in international climate change and trade negotiations. Developing a set of guiding principles or a “best practice” for emissions trading schemes and the use of free allowances might be one idea worth being taken under consideration, in order to ensure that efforts to address climate change are efficient and effective and that possible adverse effects are minimised.

## 1. INTRODUCING EMISSIONS TRADING SCHEMES

### 1.1 What Is an Emission Trading Scheme?

An emissions trading scheme (ETS) is a policy measure intended to reduce emissions in a cost-effective manner. Generally, it consists of a cap for total emissions from covered sectors, rights or ‘allowances’ to emit greenhouse gases (GHGs), and a market for trading of allowances. The cost-effectiveness relates to the trading, as emission reductions can be undertaken where the abatement costs are relatively low, whereas industries with less favourable abatement opportunities can buy additional allowances on the market. This can be compared to a carbon tax, where costs will apply across the board.

Like any market, the key to prices is scarcity and the price of an emission allowance depends on both the absolute quantity of allowances available and expectations about the future.<sup>1</sup> The most fundamental difference between an ETS and any normal market is that the amount available depends directly on government decisions about allocations; expectations about the future represent anticipations about impending emission targets.<sup>2</sup> A central authority estimates emissions for a specific period of time and then sets an overall cap below that level, creating the maximum amount of emissions allowed during that period. The cap is then divided into allowances or individual emissions quotas distributed to each trading entity in the scheme. The total number of allowances cannot exceed the cap.<sup>3</sup> Compliance could be established by comparing actual emissions with permits submitted, including any permits traded within the cap.

### 1.2 Different Kinds of Caps

There are ETSs with absolute caps, like the EU-ETS. Such schemes adopt *absolute targets* for emission reductions, expressed in terms of emissions. An absolute cap has the advantage of guaranteeing a maximum allowed quantity

of emissions while also giving industry some degree of predictability in terms of emissions, although not cost. It can, however, be argued that the system is vulnerable to severe growth shocks, as it may involve difficulties adjusting to unexpected increases in economic growth, or, as has been observed in recent years, to keeping the cap relevant in recessions.

Schemes with output-based caps, like the New Zealand ETS, adopt *intensity targets*, which are expressed in terms of emissions *per unit of output*. Under intensity targets, the scheme is linked to *future GDP* and allows for the automatic adjustment to sudden growth shocks. Notably, an output-based cap can tackle uncertainty about *future GDP*, as opposed to the absolute cap; however, it does not deal with uncertainty about future *emission intensity* or *abatement costs*.

Output-based caps are understood to be less economically efficient, as they preclude the option of reducing emissions by reducing production. At the same time, they are attractive to industry, as they do not place a limit on output.<sup>4</sup>

### 1.3 Free Allowances

#### Why free allowances?

There are several reasons for allocating emission allowances free of charge. One is political; introducing a scheme for taxing polluters is difficult as it implies costs for domestic industry, an important constituency for policy-makers. Initially distributing allowances free of charge is a way of introducing the costs gently before gradually moving into other modes of distribution, such as auctioning.

Other reasons are related to concerns of carbon leakage and distortions in competitiveness. Carbon leakage is when emissions are reduced in one country as a consequence of climate

change regulation, then increased elsewhere. This economy-wide concept relates to the environmental impact of the measures. Carbon leakage can appear through three channels. First, it can result from a loss in market share in the domestic market on behalf of foreign competitors. Second, it can arise from new investment taking place on foreign markets. Lastly, as demand for fossil fuels decreases at the domestic market following the carbon cost, the price of fossil fuels will decrease, leading to an increased demand in other countries.

As of today, there is limited evidence of carbon leakage. The EU-ETS, described further in section 2.1, is a pioneer in putting a price on carbon-emissions on a broad scale and therefore the only real example that can be studied when trying to calculate the evidence for carbon leakage. Looking at the existing literature on the EU-ETS, it seems that the EU-ETS in its initial stages has not had a significant impact on either firms or GHG emissions.<sup>5</sup>

The most immediate explanatory factor to these observations is that mitigation policies under the EU-ETS thus far simply have not been ambitious enough to incur serious costs for firms, or that compensatory schemes have dampened the effects. Moreover, it must be kept in mind that allowances have been distributed for free, with the purpose of avoiding carbon leakage. Additionally, environmental policy is but one factor among many taken into account when firms make decisions about location.

More ambitious measures to mitigate climate change, which will be necessary during the coming decades, may induce higher levels of carbon leakage if asymmetries in mitigation commitments between countries remain important. Intuitively, a wide country participation in climate change mitigation would however reduce the risks for leakage as there would simply be fewer places able to attract investment or win market shares based on cheap carbon.

Simulations of how much leakage could occur from climate change policies vary widely, depending on country and sector coverage and level of ambition of climate policy, among other factors. Generally, higher leakage rates can be expected for more trade-intensive sectors with a high intensity of emissions or energy inputs. It can be noted however that carbon leakage is not likely to entirely wipe out an effort to reduce emissions.<sup>6</sup>

Although levels of observed leakage are modest or non-existent, concerns for leakage remain noticeable particularly in carbon-intensive, trade-exposed industry. Allocating allowances for free is one means of levelling the playing field with competing industry in unrestrained economies. As we shall see in Chapter 2, free allocation is widespread in existing and suggested ETSs, but often with the intention of narrowing the practice down to only cover those trade-exposed, carbon-intensive industries that are presumptively the most sensitive to risks of carbon leakage.

#### **How can free allowances put a price on carbon emissions?**

The basic idea with free allocation of allowances is that, irrespective of the means of allocation, emission allowances carry an *opportunity cost*. Thus, a firm using an allowance to account for its emissions loses the opportunity to sell the allowance at the current market price. This may create an incentive for producers to reduce emissions, allowing them to sell their allowances. Efforts to sell allowances are an example of classic rent-seeking behaviour.

However, as will be discussed further in Chapter 4, there are a few disclaimers to this idea. For instance, it can be discussed whether firms with free allocations would actually be under direct pressure to cut emissions at all. Second, the method for determining the levels of free allowances distributed to individual firms may have an impact on the incentives to reduce emissions. The same is true for different kinds of caps, as mentioned in section 1.2.



### **Different methods for determining the amount of allowances distributed to each producer**

There are different methods for distributing allowances free of charge. The choice of method influences the incentives created by the free allocation and is therefore more than a technicality.

The three principal methods for determining the levels of allowances are grandfathering, benchmarking and output based allocation.

**Grandfathering** refers to the allocation of allowances based on past levels of emissions. The administrator normally bases its calculations on the average emissions of an installation over a specified period, possibly excluding the year with the lowest level of emissions, and uses these averages to determine the amount of allowances the installation should receive.

A major concern with grandfathering is that it may reduce the incentives for individual plants to reduce emissions, assuming they expect that future allowances will be based on current levels of emissions.

**Benchmarking** methodology is designed to avoid the negative effects associated with grandfathering. The principle behind benchmarking is to assess each entity's emissions' efficiency against a sector average using a mathematical formula. Allowances can then be

distributed based on a benchmark of the most efficient installations, to create incentives to reduce emissions. One advantage with this method is that it is likely to ensure a non-distorted carbon price signal, rewarding carbon efficiency and early action.

Preconditions for developing benchmarks are the availability of common definitions, reliable data, good measurement and verification systems. Good benchmarks require considerable efforts by all stakeholders and ultimately acceptability, as access to industry data is decisive.<sup>7</sup>

**Output-based allocation** means that the amount of allowances distributed is related to the output from an individual plant. Sources emitting exactly the sector benchmark emissions per unit of output produced will pay the same amount in emissions charges as they receive back as refunds on total output. In other words, plants performing worse than the sector benchmark will make a payment to the system while plants performing better will receive a positive net refund.<sup>8</sup>

An advantage with this method is that it is predictable and straightforward for producers; however, a major disadvantage is that allocating allowances free of charge in proportion to current production could foster incentives to produce more - and consequently, to emit more - in order to get more free allowances.



## 2. EXISTING SCHEMES AND SCHEMES UNDER DISCUSSION

In this chapter, we will give a brief overview of existing carbon emissions trading schemes. We start by discussing the EU, as its system was the first one to appear and is still one of the most important schemes in terms of coverage. Most lessons drawn on ETs thus far are based on the EU experience.

We have also included one section on suggested ETs in the USA through two congress bills. Contrary to the other schemes discussed, these are merely proposals.

### 2.1 The European Emissions Trading System

The European Emissions Trading System, the EU-ETS, based on Directive 2003/87/EC,<sup>9</sup> was introduced in 2005 as the primary tool allowing the EU to fulfil its Kyoto commitment. The EU-ETS is a cap-and-trade system with an absolute quantity limit for overall emissions from the covered installations, and free trade of emission allowances between these. Facilities covered must measure and report their CO<sub>2</sub> emissions and subsequently surrender an allowance for every ton of CO<sub>2</sub> they emit during annual compliance periods.

During the first trading period from 2005-2007, the system was established aiming for full operational capacity during its second trading period, which coincides with the first Kyoto commitment period 2008-2012. The third trading phase will begin in 2013 and end in 2020.

#### Cap-setting

The quantitative limit for emissions in the EU-ETS has so far been the sum of the separate decisions on member states' caps. Each member state proposes a cap, or a quantity of European Union Allowances (EUAs), to be distributed to the different covered installations within the country. This quantity is thereafter subject to review and approval by the European Commission.

From phase III, the cap will be one single community cap set by the Commission. This cap will be reduced gradually over time, with the aim of reducing emissions by 21 percent relative to 2005 levels in 2020.

The EU-ETS can be categorized as a cap within the cap<sup>10</sup>; the Kyoto Protocol imposes an economy-wide cap on all greenhouse gas emissions, whereas the EU-ETS initially covered only CO<sub>2</sub> emissions and a subset of the economy.

#### Coverage

The system covers over 11,500 energy-intensive installations across the EU, which represent nearly half of Europe's emissions of CO<sub>2</sub>. These installations include combustion plants, oil refineries, coke ovens, iron and steel plants and factories making cement, glass, lime brick, ceramics, pulp and paper. From 2012, the aviation sector will also be covered.<sup>11</sup> Other means of transportation are not covered.

Forestry, a sector that can play an important role in reducing emissions, is not covered by the EU-ETS. Including forestry has been discussed, but even though the benefits to both biodiversity and climate change would be considerable, the Commission has expressed concerns that its inclusion would lead to imbalances in the carbon market, possibly lowering the price of carbon.

Agriculture accounts for as much as 14 percent of global emissions,<sup>12</sup> and there are important abatement opportunities in the sector; however, in the current EU-ETS, agriculture is not covered. One reason for this is that it is difficult to measure emissions from the agricultural sector, as with forestry. Agriculture is, however, expected to contribute to reducing emissions through the non-ETS effort-sharing agreement, a scheme parallel to the EU-ETS.<sup>13</sup>

### Treatment of imports and exports

Imports are not currently covered by the EU-ETS. Suggestions have been put forward by individual member states to require that imports of industrial goods from countries with less stringent environmental regulations be taxed in order to protect European industries from the bias that is caused by the costs arising for them through the ETS.<sup>14</sup> Such suggestions, however, have so far met little enthusiasm from the majority of the member states with no current, concrete plans for introducing border measures into the EU-ETS.

The same can be said for any special measures relating to exports, such as rebating of costs for allowances.

Currently, this means that covered European industry competes both in the domestic market and in export markets against industry, which is in most cases not obliged to bear the costs for its carbon emissions.

A first step of including imports and exports in the ETS has however been taken, with the inclusion of aviation into the ETS from 2012. Indeed, in Annex I to the directive establishing the ETS it is stated that the scheme covers, with certain exceptions, “flights which depart from or arrive in an aerodrome situated in the territory of a Member State to which the treaty applies”. This means that a flight across the Atlantic and ending in London, for instance, will need to surrender allowances for emissions having occurred partially outside of the European air territory.

Where flight operators would need to hold allowances in the EU while having already been covered by a climate change policy in a third country, the ETS provides the Commission with options ensuring an optimal interaction between the European scheme and the third country’s scheme.<sup>15</sup>

### The trading of allowances

Trading can take place between installations. The legal framework of the trading scheme

does not regulate how or where the market in allowances takes place; companies with commitments may either trade allowances directly with each other or buy or sell via a broker, bank or other allowance market intermediary.

This trading between union-covered installations is supplemented by the possibility of temporal trading, meaning that there is no restriction on banking or borrowing of allowances within any given multi-year trading period.<sup>16</sup> Allowances are issued annually but are valid for covering emissions in any year within the trading period. Moreover, each year’s issuance of allowances occurs at the end of February, two months before allowances must be surrendered for the preceding year. Consequently, installations have a possibility of covering shortages in any given year by allowances issued for the next year. Trading between trading periods is, however, more restricted; indeed, no banking or borrowing was allowed between the two first trading periods. For the second and subsequent trading periods, unrestricted inter-period banking, not borrowing, will be allowed.

The institutional framework for emissions trading was already well developed under phase I;<sup>17</sup> several organized markets (e.g. energy exchanges) have begun to offer allowance trading services.<sup>18</sup> In addition, markets have developed several derivatives of emission permits, especially options and futures, making it possible to buy or sell permits for delivery in December 2010, 2011 and 2012.<sup>19</sup>

### Emission reductions outside the EU

Under the EU-ETS it is possible to establish links with other ETSs. The EU-ETS goes as far to say that “agreements should be concluded with third countries listed in Annex B to the Kyoto protocol which have ratified the Protocol to provide for the mutual recognition of allowances between the community scheme and other greenhouse gas emissions trading schemes...”.<sup>20</sup> Consequently, the Norwegian cap-and-trade system was linked to the EU-ETS in 2008.<sup>21</sup>

In addition, there are provisions that provide recognition of allowances under schemes in any other country as well as non-binding arrangements to provide for administrative and technical coordination.<sup>22</sup>

In parallel, there is the 'Linking Directive',<sup>23</sup> which concerns project-based credits. The directive allows for installations to comply by submitting qualifying credits for emission reductions outside the EU. Credits allowed are those provided by the Kyoto Protocol's so-called 'flexible mechanisms', the Clean Development Mechanism (CDM) and the scheme for Joint Implementation (JI), of which the credits are respectively referred to as Certified Emission Reductions (CERs) and Emission Reduction Units (ERUs). This option is subject to a few exceptions in sector coverage. In particular, credits generated by CDM activities related to nuclear power and carbon sinks cannot be used for compliance.<sup>24</sup> There is also an upper limit of how large the share of total emission reductions achieved through this means can be. These limits are specified in each member state's National Allocation Plan and vary among countries.<sup>25</sup> The limit relates to the general understanding of the Kyoto protocol, where at least half of the reduction implied by a country's assigned limit must be accomplished domestically.

### Mode of allowance allocation

In general, allowances have been allocated without charge to covered installations under the ETS. The method for determining the amount of allowances each installation should be granted has been grandfathering, meaning based on historical emissions from each installation.

In spite of the grandfathering, it has been difficult to allocate the 'right' amount of emission allowances. Cooper notes that during phase II, the manufacturing sector was generally favoured, at the expense of the power-generating sector.<sup>26</sup> This over-allocation was not uniform across member states though; Germany and Spain strongly favoured their steel industries. Spain also favoured its brick

and ceramics sector, together with the UK and Italy, whereas France favoured its pulp and paper sector. According to Cooper (2010), this was possible as the Commission focused more on the totals when reviewing the national allocation plans than on the distribution of permits across industries.

Under phase I, member countries were allowed to auction up to five percent of allowances, rising to ten percent under phase II. Under the first phase, only four member countries made use of this possibility, and only one country, Denmark, auctioned the full five percent.<sup>27</sup> Also in phase II, auctioning remains limited; no country proposed auctioning the maximum percentage allowed, while most countries do not auction at all.<sup>28</sup>

In the post 2012-strategy, emission allowances within the EU-ETS will increasingly be distributed through auctioning. In principle, all permits for electricity generators are to be auctioned from 2013, although provisions are made for derogations under certain conditions.<sup>29</sup> Sectors and sub-sectors exposed to a significant risk of carbon leakage will, as mentioned above, receive 100 percent of the allowances free of charge, compared to a benchmark of the 10 percent most efficient EU performers, until 2020.<sup>30</sup> The quantity of allowances allocated for free will be, in the maximum scenario, the share of emissions of the industries in the eligible sectors in 2005-2007, declining year by year in line with the increased ambitions of the overall targets.

The allocation of emission allowances will, to a large extent, be harmonized in phase III, potentially removing some of the adverse effects observed during the early stages.

### Which industries receive allowances for free and for how long

In order to determine which industries will continue to benefit from free allowances, the European Commission was assigned to establish a list of sectors and sub-sectors sensitive to carbon leakage no later than 31 December 2009, with a new list every five years. The

Commission may add more sectors every year if the sector demonstrates that it satisfies the inclusion criteria. The benchmarks used when determining who should benefit from free allowances will be stringent, meaning that only the most efficient installations, in terms of carbon emissions, will have any chance of receiving all of the needed allowances for free. This means that installations within the eligible sectors, which are less efficient in terms of carbon emissions than the benchmark, will receive less than 100 percent allowances free of charge.

The free allowances will be product-based, not sector-based. Therefore, it is not because an installation mainly produces goods exposed to a significant risk of carbon leakage that it receives allowances for free for all products coming from it.

There are three ways for a sector or sub-sector to be eligible for inclusion on the list:<sup>31</sup>

- i. If the sum of the direct and indirect additional costs induced by the implementation of the ETS would lead to a substantial increase of production costs, calculated as a proportion of gross value added, of at least 5 percent *and* the intensity of trade with third countries, defined as the ratio between the total value of exports to third countries plus the value of imports from third countries and the total market size for the Union (annual turnover plus total imports from third countries), is above 10 percent;
- ii. If the sum of direct and indirect additional costs induced by the implementation of the ETS would lead to a particularly high increase of production costs, of at least 30 percent;
- iii. If the intensity of trade with third countries is above 30 percent.

Sectors can also qualify for entry after a qualitative assessment, taking into account the possibility for individual installations in the sector or subsector concerned of reducing emission levels or electricity consumption,

appropriately including the increase in production costs that the related investment may entail.<sup>32</sup>

In December 2009, the Commission issued this list, including 164 sectors and sub-sectors.

#### **Treatment of new entrants and of plant closures**

The EU sets aside a reserve of allowances to distribute to new entrants. So far, it has been up to the member states to decide upon the size of this reserve, leading to considerable variations around the EU average of 3 percent under phase I.<sup>33</sup> Likewise, there has been no standardization on allocating allowances and replenishing the reserve. There have also been different formulae for determining how many allowances a new entrant should receive.

From phase III, there will be increased harmonization as a reserve of allowances for new entrants will be set up, corresponding to five percent of the community-wide allowances.<sup>34</sup>

In the case where plants in sectors covered by the EU-ETS cease their operations, no free allowances are allocated.<sup>35</sup> The closure policy is linked to the new entrant reserve; allowances allocated to existing sources that shut down are fed into the entrant reserve to be allocated to new sources.<sup>36</sup> In order to reduce the risk that free allowances contribute to keeping inefficient plants running, some member countries have adopted a 'transfer rule', where owners of existing facilities currently being shut down can transfer the allocation to a new replacement facility.

#### **The future of the EU-ETS**

The EU is currently in the process of preparing its ETS for the third trading period, focusing on its capability of contributing to the more important emission reductions the EU has committed to during the coming years (the EU has committed to reducing greenhouse gas emissions by 20 percent compared to 1990 levels, irrespective of the development

on the global arena, and by 30 percent when an equivalent effort is being made by other major emitting economies under a satisfactory international agreement<sup>37</sup>). Many of the changes to the existing ETS have already been mentioned above, and concern inter alia the allocation mechanism, the adjustment of the EU-wide cap where national allocation plans will be abandoned in favour of an overall EU limit, the use of credits from the flexible mechanisms JI and CDM, and potentially additional types of credits and/or mechanisms foreseen under a future international agreement.<sup>38</sup>

As a step in this process, the European Commission released a communication to the other European institutions in May 2010, discussing the options for moving beyond an emission reduction of 20 percent.<sup>39</sup> Any decisions will have to be made by the legislative institutions, the Council and the Parliament, but at this point the Commission recommends sticking to the 20 percent target. It does, however, also advise the Union to prepare for a future movement towards the 30 percent target.

## 2.2 The Norwegian ETS

The Norwegian ETS was launched in 2005. During the first phase, from 2005 to 2007, the scheme covered only 10 percent of the total Norwegian emissions. An over-allocation of emission allowances took place and, as a result, the carbon price was close to zero.<sup>40</sup> Since the beginning of the second phase in 2008, the Norwegian ETS is linked to that of the EU. The discussion of the Norwegian ETS below is based on the design of the scheme for the second and current phase, lasting until 2012.<sup>41</sup>

### Coverage

During the years 2008 to 2012, allowances for approximately 75.2 million tons (Mt) of CO<sub>2</sub>e have been and will be distributed, which is on average a little over 15 Mt per year. This cap should be seen in the light of the expected 2010 emissions of Norwegian covered installations of 21 Mt CO<sub>2</sub>e.

The Norwegian ETS covers approximately 40 percent of the GHG emissions from Norwegian sources.<sup>42</sup> The scheme covers CO<sub>2</sub> emissions from the activities listed in Annex I of the EU Emissions Trading Directive and, in addition, any installations that are opted into the system under Article 24 of the Directive. Article 24 allows countries to include additional activities and GHG emissions in their trading scheme. Under this provision, Norway has, from 1 July 2008 onwards, unilaterally included N<sub>2</sub>O emissions from nitric acid production.<sup>43</sup> Beginning in 2010, Norway has included aviation into its trading scheme.<sup>44</sup>

Installations covered by the Norwegian ETS can together rely upon credits from the Kyoto flexible mechanisms, CERs and ERUs, accounting for up to 20 percent of the total quantity of emission allowances. The same qualitative restrictions that apply under the EU-ETS regarding the use of these apply under the Norwegian ETS.

### Mode of allocating allowances

In terms of the ratio of allowances that Norway allocates through auctioning, the country has different rules than the EU. Norway can auction up to 50 percent of its allowances per year. This reflects the “inclusion in the Norwegian cap of the Norwegian off-shore oil industry that had previously been subject to a USD 50/ton tax on CO<sub>2</sub>e emissions”.<sup>45</sup> During the period 2008-2012, Norway auctions allowances for 31.6 Mt overall, which is 42 percent of the total amount of allowances.

Land-based industries covered by the EU Directive are allocated allowances free of charge based on the installations’ historical emissions over the period 1998-2001. Revisions made to the Norwegian ETS provide for free allocation to installations established after 2001 but holding GHG emission permits by 28 March 2008, on the basis of their historic emissions during the years 2002-2007. Revisions provide for increased allocation of allowances under specific circumstances to land-based installations with emissions during the 1998-2001 period that have significantly



increased their emissions after 2001, due to substantial changes in the nature and scale of their activities. Covered installations in the petroleum sector will not be allocated allowances free of charge.

Installations that produce nitric acid, and are thus covered by the scheme based on the option provided for by Article 24, will also receive allowances free of charge based on their actual emissions during the historical period 1998-2001.

During the period 2008-2012, allowances for in total 39.4 Mt will continue to be allocated free of charge to eligible industries. This is 52.4 percent of the total amount of allowances.

#### **Policy for new entrants and plant closures**

Installations that are considered permanently closed will not receive allowances free of charge in the following years, but will be allowed to keep the allowances they have been allocated in the year of closure. There is no general reserve of free allowances for new entrants or increased activity at existing installations.

There is however a reserve set aside for new highly efficient heat and power plants. Eligible plants will receive allowances free of charge for approximately 80-83 percent of their expected emissions. This reserve contains allowances for 4.2 Mt.

### **2.3 The Swiss ETS**

#### **Both a tax and an ETS**

Under the Kyoto Protocol, Switzerland took on a greenhouse gas reduction commitment of eight percent by 2012, compared to 1990 levels. The CO<sub>2</sub> Act,<sup>46</sup> the principal legal basis for compliance with the commitment, stipulates a reduction target of 10 percent by 2010, relative to 1990 levels. This reduction target specifically concerns energy-related CO<sub>2</sub> emissions. Switzerland's CO<sub>2</sub> tax and emissions trading scheme, discussed below, also exclusively apply to energy-related CO<sub>2</sub> emissions.

#### **Free allocation of allowances conditional on emission reduction commitments**

The main policy instrument in Switzerland is the CO<sub>2</sub> tax. Companies may avoid paying this tax by taking on legally-binding CO<sub>2</sub> reduction commitments (for the period 2008-2012). Accepting such commitments is possible for energy-intensive companies and companies that face a decreased international competitive position as a result of the CO<sub>2</sub> tax. The large companies among these will be allocated emission allowances free of charge, the amount of which equals their emission targets.

The reduction targets for these large companies (excluding small and medium enterprises (SMEs)) are set using a bottom-up approach. Several company-specific factors are taken into account when determining the reduction target. Amongst these are the reduction measures already taken, the company's potential to reduce emissions further, the costs of reduction measures, the position of the company in the international market, the expected growth rate of production, and the avoided taxes. As mentioned above, these companies will receive allowances free of charge, equalling their CO<sub>2</sub> targets. If the company cuts its emissions below this target, it can sell the allowances or carry them over to the next commitment period (after 2012). If it emits CO<sub>2</sub> in excess it will have to buy allowances. In the event of non-compliance, the CO<sub>2</sub> tax is to be paid retroactively for each tonne of CO<sub>2</sub> emitted since exemption was granted.

For SMEs, no company-specific reduction targets are set. Instead, either a benchmark model is used to set a target value or a plan of actions is designed. These small companies do not receive any emission allowances, however, they can participate in emissions trading and buy emission credits to fulfil their commitment if they exceeded their target.

#### **Trading and offsetting**

Both companies and private actors are allowed to participate in the emissions trading scheme. Trading is thus open to everyone, regardless

of whether they are liable for the CO<sub>2</sub> tax. The only requirement is the opening of an account under the National Emissions Trading Registry. Moreover, surplus emission allowances originating from Switzerland can be bought or sold at all times through this registry.

The flexible mechanisms provided by the Kyoto Protocol, CDM and JI, give companies another possibility to reach their emission targets. Their related credits are also traded through the National Emissions Trading Registry, which, again, is open to all companies and private actors.

Foreign certificates may be used to cover a maximum of 8 percent of the target. This includes the credits from the Kyoto flexibility mechanisms, CERs and ERUs, as well as allowances from international emissions trading schemes that could, in the future, possibly be linked to the Swiss scheme. A linking with the EU Emissions Trading System is being sought but for this to be possible, an agreement on the mutual recognition of emission credits must first be negotiated.

## 2.4 The New Zealand ETS

New Zealand ratified the Kyoto protocol in 2002, committing to reducing average net emissions during the first commitment period to 1990 levels.

Several policy steps were taken in order to fulfil this commitment, leading finally to the New Zealand Emissions Trading Scheme (NZ-ETS). The NZ-ETS, a standard cap-and-trade scheme, was adopted in September 2008 through the Climate Change Response (Emissions Trading) Amendment Act, which amended the Climate Change Response Act 2003. Ever since, a number of amendments have been made.

The NZ-ETS introduces a price on greenhouse gas emissions to encourage the reduction of emissions and the planting of forests to absorb carbon dioxide. It operates by requiring

participants to surrender an emission unit for each equivalent ton of GHG they are deemed to emit.

### Coverage

The NZ-ETS is the first emissions trading scheme in the world to cover all sectors of the economy and all six greenhouse gases covered by the Kyoto Protocol; carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF<sub>6</sub>).<sup>47</sup>

This wide coverage can likely be explained by particularities of New Zealand's economic structure and thus its emissions.<sup>48</sup> First, the country has quite a unique emissions profile, with methane and nitrous oxide accounting for more than half of its total emissions, as compared to 16 percent in other industrial countries. Addressing only CO<sub>2</sub> would simply not be efficient.

Second, when it comes to the sectoral coverage, forestry was the first sector to be included, even though it is excluded in most other schemes. In the case of New Zealand, forestry occupies an important position in the national economy and has a huge potential of generating emission credits. Indeed, in the NZ-ETS, forest landowners derive credits for forestry activities that lead to carbon sequestration and face liability for subsequent release of carbon into the atmosphere. Similarly, while agriculture is excluded from other ETSs, it will be included in the NZ-ETS. This reflects its importance as an emitter, accounting for 48 percent of total GHG emissions in New Zealand, as compared to the Annex I average of 7 percent in 2006.<sup>49</sup>

As of today, the following sectors are included, some of which are being gradually phased in: forestry, transport fuels, electricity production, industrial processes, synthetic gases, agriculture and waste. The system aims to cover all major sectors of the economy from 2015.



### Treatment of imports and exports

Imports are currently not covered by the NZ-ETS. Indeed, New Zealand is one of the most vocal among OECD-countries to reject the use of border measures. This can be illustrated by the following quote from the Report of the Emissions Trading Scheme Review Committee: “if New Zealand were to impose a unilateral border tax adjustment, it would be likely to draw adverse international attention and meet challenge in the WTO. A border tax could address competitiveness concerns, but the case for free allocation to the industrial and agricultural sectors under an ETS would need to be reviewed, along with the process for developing allocation plans in general. A border tax regime would need to cover both our imports and exports, and new legislation would be required. A border tax would also be counter-productive to any economy, especially a trade-exposed one like New Zealand that was seeking to introduce a Kyoto-style price on carbon. Border tax adjustments do not provide strong domestic incentives to reduce emissions [...]”.

Border measures are thus not included in the NZ-ETS, although there are concerns about leakage and distortions in competitiveness. Against this background, amendments of the ETS were made in June 2009.<sup>50</sup> These amendments included the delaying of agriculture’s entry into the ETS and providing substantially greater protection to emissions-intensive, trade-exposed activities over a much longer period.

### The carbon market

New Zealand Units (NZUs) are the primary units of trade under the NZ-ETS. They are equal to one tonne of CO<sub>2</sub> and thus identical to EUAs. NZUs are issued by the government and can be traded by any person. They do not have an expiry date and will thus be available for use during future commitment periods.

New Zealand’s carbon market can be divided into two subgroups; the allowances market and the project based-markets.<sup>51</sup> In the allowances

market, NZUs originate from forestry activities and government allocation, either free of charge or by auctioning. In the project-based market, carbon credits are derived from CDM projects in developing countries, JI projects together with other industrial countries, and voluntary emission reductions outside of regulatory requirements by an entity.

The NZ-ETS is linked to the world market for carbon. This is considered particularly important to a small country like New Zealand, as it is likely to reduce volatility.<sup>52</sup> In the absence of such a link, one large player on the country’s market would have material impact on prices.

Participants in the scheme will either be allocated units free of charge or they will have to buy them on markets for emission units. Firms eligible for free allocation of NZUs are those that are emissions-intensive and trade-exposed. If an activity is deemed eligible, all businesses undertaking the activity, having submitted data in determination of eligibility, automatically qualify for free units. The free allocation, beginning at 90 percent of 2005 levels, will be linearly phased out over a period of 75 years.<sup>53</sup> Permits are allocated to firms carrying out individual activities in proportion to their output and a benchmark on emissions-intensity defined for each type of activity.

### 2.5 A suggested US ETS

The US has not ratified the Kyoto Protocol and currently has no federal climate change policy in place<sup>54</sup>; however, several proposals have been made on various policies.

The Waxman-Markey Bill<sup>55</sup> was drafted by the House Energy and Commerce Committee. In June 2009, the US House of Representatives passed the Bill; however, the Senate has never voted on it, halting progress. Another bill<sup>56</sup> was introduced as a discussion draft in May 2010 by Senators John Kerry and Joe Lieberman. Similarly, the Senate has never voted on the Kerry-Lieberman Bill.

Even though these two bills are arguably dated, recent legislative efforts regarding climate change have been low in ambition in the US. As a result, these two bills are the most recent attempts to incorporate a large-scale emissions trading scheme.

The Waxman-Markey and Kerry-Lieberman Bills suggest, amongst other measures, a cap-and-trade scheme scheduled to start in 2012 and 2013 respectively. The purpose of the bills is to reduce emissions from capped sources, compared to 2005 levels, with 17 percent by 2020, 42 percent by 2030, and 83 percent by 2050. In both bills, the yearly amounts of allowances that will be distributed and auctioned have been set to fulfil these targets. These yearly amounts are defined in absolute numbers.

### Coverage

The sectoral coverage<sup>57</sup> of the Waxman-Markey cap-and-trade scheme is phased-in over the first five years. Industrial stationary sources in energy-intensive sectors such as aluminium, cement, lime, pulp, paper, iron and steel will be covered by the scheme from 2014 onwards, and natural gas local distribution companies from 2016 onwards.<sup>58</sup> Other covered entities will have to surrender emission allowances from the start of the cap-and-trade scheme onwards. These other covered entities are electricity sources, fuel producers and importers, industrial gas producers and importers, and geological sequestration sites.

The sectoral coverage<sup>59</sup> of the Kerry-Lieberman cap-and-trade scheme is also phased-in during the first four years. The industrial stationary sources and natural gas local distribution companies will only be covered from 2016 onwards.<sup>60</sup> Other covered entities include electricity sources, refined product providers, industrial gas producers and importers, and geological sequestration sites. For both bills, beginning 2016, sectors that are covered by the cap account for approximately 84.5 percent of the US' GHG emissions in 2005.

The agriculture, forestry and transport sectors are not covered by the cap-and-trade schemes.

### Treatment of imports and exports

In both bills, exports of certain products from covered entities<sup>61</sup> are exempted from the obligations relating to the cap-and-trade scheme.<sup>62</sup> With respect to imports, both bills provide for the future implementation of border measures if certain circumstances prevail. In the Waxman-Markey Bill, it is stated that if by 2018 no multilateral climate change agreement in line with the US' negotiation objectives has entered into force, an international reserve allowances programme will be established, entering into force from January 2020.<sup>63</sup> In the Kerry-Lieberman Bill it is stated that if by 2020 no multilateral climate change agreement in line with the US' negotiation objectives, including comparable GHG emission mitigation objectives, has entered into force, an international reserve allowances programme will be established.<sup>64</sup>

Under both international reserve allowance programmes, importers of goods from sectors with an energy or GHG intensity of at least 5 percent and a trade intensity of at least 15 percent or with only an energy or GHG intensity of at least 20 percent, will have to buy a certain amount of importer emission allowances upon importation. Imports from Least Developed Countries (LDCs) are exempted from this requirement. So are imports from countries that are parties to a climate change agreement to which the US is a party as well, and are bound by reduction commitments as stringent as those of the US. Sectors will be exempted if the country has an annual energy or GHG intensity in the sector that is equal to or lower than that of the US and if the country represented less than 5 percent of US imports in this sector and at the same time contributes nationally less than 0.5 percent to global emissions.

### Mode of allowance allocation

Under both bills, the national emission allowances will in principle be distributed through auctioning, although initially only a small percentage of allowances will actually be auctioned; remaining allowances will be distributed for free.

### Which industries receive allocations for free

Most of the allowances granted free of charge to covered entities are allocated to energy-intensive, trade-exposed entities with the purposes of preventing carbon leakage, promoting a strong global effort to significantly reduce GHG emissions, and providing a rebate for GHG emission costs incurred due to the cap-and-trade scheme. The allocation of free allowances is the primary policy instrument in the two bills dealing with the concerns of carbon leakage and competitiveness. The border measures mentioned above would only supplement this allocation. Under the Waxman-Markey Bill in 2014, the emission allowances freely distributed for these purposes will be up to 15 percent of the total amount of allowances, a percentage that will be gradually reduced in line with the decrease of the cap. After 2025, the free allocation will be phased-out, a process that will be completed in 2050. Under the Kerry-Lieberman Bill, from 2016 to 2025, 15 percent of the total amount of emission allowances will be distributed for these purposes, after which the free allocation will be phased-out between 2026 and 2029. Under both bills, industrial sectors are eligible if they have an energy or GHG intensity of at least 5 percent and a trade intensity of at least 15 percent, or only an energy or GHG intensity of at least 20 percent.

Covered entities in eligible industries will receive free allowances on the basis of the sum of their direct and indirect carbon factor under both bills. The direct carbon factor of an entity is determined by multiplying its average annual output in the preceding two years by the most recent calculation of the average direct GHG emissions per unit of output for all covered entities in the relevant sector. The indirect carbon factor of an entity is determined by multiplying its average annual output in the preceding two years by the electricity intensity factors of the entity for the year concerned and by the electricity efficiency factor of all entities in the relevant sector for the year concerned.

### Treatment of new entrants and plant closures

If a covered entity closes or ceases to perform qualifying activities, the free distribution of emission allowances is stopped and the entity will have to return the allowances that have been distributed to it for future years and a pro-rated amount of allowances that have been distributed to it for the year in which the entity ceases to be in an eligible industrial sector. New entrants will, in the first two years of operation, receive an amount of free allowances based on the level of emissions in comparable entities in the sector. During the next two years, possible over- and under-allocations in these first two years will be corrected for.

However, not all of these freely distributed allowances will be received by covered entities or are allocated with the purpose of reducing the impact of the scheme for industries. Other purposes for the distribution of free allowances under the bills are, inter alia, supporting the development of clean technologies, reducing the impact of the scheme on low- and middle-income households, supporting the transition to a clean economy, supporting domestic and international adaptation, and supporting international technology transfer.

### Trading and offsetting

The holder of an emission allowance can, under both bills, without restrictions, sell, exchange, transfer, hold to show compliance, or request that the administrator retire the emission allowance. This privilege is in principle not restricted to the owners and operators of covered entities.<sup>65</sup>

Under both bills, instead of holding emission allowances to show compliance, covered entities can also earn offset credits for up to 2 billion tons of GHG emissions annually. The ability of a covered entity to show compliance with the use of offset credits will be divided pro rata so that each entity is able to use these credits for the same percentage of the number of allowances they are required to hold. Special international

offset credits are granted for reductions made outside of US territory. In the beginning, in lieu of one emission allowance, only one national offset credit has to be held, but after 2018, 1.25 international offset credits will have to be held. Under the Waxman-Markey Bill, not more than half of the allowed offset credits may be international, whereas under the Kerry-Lieberman, it may only be 25 percent.

In addition, in certain circumstances, compliance can also be shown by holding an international emission allowance. Under the Waxman-Markey

and Kerry-Lieberman Bills, an international climate change programme will qualify if (1) the programme is run by a national or supranational foreign government and imposes a mandatory absolute tonnage limit on GHG emissions from one or more foreign countries, or from one or more economic sectors in such a country or countries and (2) the programme is at least as stringent as the programme established by the Waxman-Markey or Kerry-Lieberman Bill respectively. Under both bills, a limit may be applied to the use of international emission allowances to demonstrate compliance.

### 3. EXPERIENCES SO FAR WITH FREE ALLOWANCES IN THE EU-ETS

Although there are a number of functioning ETSs, as seen above, lessons at this stage can be primarily based on the EU-scheme, as it has the longest history.

#### 3.1 Putting a Price on Carbon

The challenge of setting the right cap and lessons on price variations

Unlike normal markets, emissions trading schemes are designed markets where demand and supply are dependent on governmental decisions or, in this case, the European Commission; therefore, normal market rules do not apply when it comes to prices.

When choosing an ETS rather than a carbon tax, the primary goal is to cap the emissions. A tax, on the other hand, reveals that the primary objective is to regulate the carbon price, either because the regulator wants the price to send a signal to producers to pursue low carbon growth or technologies, or because it does not want high prices to hurt domestic industry. Indeed, it is difficult to come up with a model where the government could control both price and quantity, as variations in price seem inevitable in an ETS.

The EU-ETS has shown that putting the right cap is tricky. If the cap is too generous, there will not be enough scarcity in the market to create a price signal. Conversely, if the cap is too strict, it would risk reducing support for the scheme among industry, as the carbon cost would be considerable and increase carbon leakage concerns. Moreover, in addition to striking a balance between these two elements, it is necessary for the scheme to be able to adapt to external shocks like the financial crisis in 2008.

#### Phase I- 2005-2007

The first phase of the EU-ETS was essentially a trial period intended to put the infrastructure in place rather than achieve actual emission reductions.<sup>66</sup> The observations based on this phase should be seen in that light.

As mentioned, during the first trading period, allowances were distributed for free based on historical emissions. This allowed the industry incentives to overstate their needs to capitalize on the market value of excessive units.<sup>67</sup> There is also some evidence that the market intelligence, on which the calculations for the amount of free allowances allocated was based, was erroneous.<sup>68</sup> As a result, the allowances turned out to be over-allocated, with 3 percent unused towards the end of the trading period and a carbon price close to zero. This development was indeed not a success; however, as we shall see below, experiences from this phase were used when designing phase II in order to avoid repeating the errors.

During the initial stages of Phase I before this over-allocation was known, prices of emission allowances varied considerably. A few months after the launch of the ETS, carbon prices rose to unexpectedly high levels. Prices then plateaued on a level between 20-30 Euros per ton CO<sub>2</sub> until they finally crashed in the spring of 2006. The crash can be explained by the release of data on actual emissions during 2005, revealing that there was no shortage of allowances, and the announcement that carry-over of permits to the second phase was not allowed.<sup>69</sup>

The suggestion that some companies may actually have cut back emissions in the face of a stringent carbon price was rarely discussed,



but most studies (e.g. Ellerman and Buchner 2006) suggest that actual abatement was one component accounting for the surplus.<sup>70</sup>

### Phase II- 2008-2012

By the launch of the second trading period, the European Commission had learnt its lesson and rejected 'inflated' national allocation plans (NAPs). Indeed, most of the NAPs initially proposed for Phase II offered only modest cutbacks relative to projections of sharply rising emissions and would in aggregate have resulted in an increase of around 5 percent relative to the verified levels of 2005. The Commission consequently decided to reject 9 out of 10 suggested NAPs and cut total allocations in Europe by 10 percent as compared to the proposed allocations in these initially submitted draft NAPs, turning the proposed increase in emissions into a decrease of 5 percent below 2005 levels.<sup>71</sup>

In Phase II, prices climaxed at over 20 Euros per metric tonne of CO<sub>2</sub> and rose to a peak of 29 Euros per tonne in July 2008. The high prices may have been supported by speculative purchases. As the financial crisis struck in the autumn of 2008, permit prices declined sharply, reaching a low of 8 Euros per tonne in February 2009, before recovering into a range of 12-14 Euros per ton at the end of the year. Thus, the value of the allowances freely allocated, considering the prices at the end of 2009, was roughly USD 39 billion a year.<sup>72</sup>

Even with the recession reducing the need for permits, they retained value because they can be carried forward in time, unlike the case of the previous phase.

### Price variations

As noted above, there have been considerable variations in price since the beginning of the EU-ETS. In extreme cases, spot prices have experienced a price decline of 10 Euros per EUA in the space of two days.<sup>73</sup> This implies a cost, as difficulties in predicting future

allowance prices prevents the transmission of a consistent price signal to agents to invest in low carbon technologies, thereby delaying investment decisions.<sup>74</sup> By waiting, a company can gain more knowledge about future CO<sub>2</sub> prices for better forthcoming decisions.

Some<sup>75</sup> even go so far as to argue that the social cost<sup>76</sup> of an additional tonne of CO<sub>2</sub>, in terms of climate change, is as high in recessions as it is during booms, deeming it inappropriate to have the price of CO<sub>2</sub> permits vary significantly in the short run. Rather, a steady persistent price-signal should be sent to all decision-making agents stating that they should reduce CO<sub>2</sub> emissions at all times.

### How does the inclusion in the ETS of Kyoto flexible mechanisms affect the carbon price?

As mentioned above, it has been possible for covered installations and governments to buy offsets through the Kyoto flexible mechanisms CDM and JI since 2008. Members of the EU have been major sources of demand of the related credits and some observers suggest that the Linking Directive of the EU helped jump-start the flexible mechanisms.<sup>77</sup> The World Bank estimates that three quarters of the demand for Kyoto flexible mechanisms over the 2008-2012 period will come from the EU.<sup>78</sup> A secondary market has developed in fully-certified projects deemed acceptable for meeting EU-ETS targets.

CERs, the credits achieved through certified CDM-projects, trade at a discount to EUAs of approximately 10-30 percent.<sup>79</sup> There are presumably two reasons for this, both related to the demand for the credits.<sup>80</sup> First, there is a country by country limit to the use of CERs to meeting targets that could, in the future, reduce the potential value of CERs relative to EUAs. Second, as mentioned above, the EU has imposed additional criteria to the ones enforced by the CDM process and it is likely that CERs beyond 2012 will be subject to additional requirements or exclusions. Moreover, the costs for achieving emission reductions through

the flexible mechanisms are generally lower than within Annex I countries, which is one of the rationales for providing for this kind of project-based emission reductions.

This discount is interesting to ponder, as it is likely to put a downward pressure on the price of emissions in the EU and the EUAs. The degree to which this discount will continue depends to some extent on the efforts of participating governments and the CDM and JI Executive Boards to streamline the instruments and their use. China has a dominant role in the CDM market and was able to set a credit price floor of 8-9 Euros in 2006. The ability of host countries to raise this floor to more fully reflect the EUA price, which varies considerably but most of the time is significantly higher than 8 Euros, depends on supply of JI and CDM-projects. If there is a shortage of supply, prices will be set by the marginal cost of EU domestic emission reductions, which in turn sets the ceiling on EUA prices. Availability of JI and CDM credits, ERUs and CERs, will reduce that marginal cost.

It could be argued that the inclusion of CDM and JI offset credits into the EU-ETS has likely lowered the price of emission allowances within the ETS. However, this does not exclude the possibility that the likely price effect could have been even more important if there had not been quantitative restrictions on the use of CERs and ERUs. Indeed, an impact assessment on the 2004 Linking Directive calculated that if unlimited use of JI and CDM credits were allowed, this would halve the expected allowance price.<sup>81</sup>

### 3.2 Effects of the Free Allowances

#### Have emissions been reduced?

Evaluating the efficiency of the EU-ETS to induce emissions reductions is difficult, as the only true comparator would be the counterfactual, meaning what would the levels of emissions have been in the absence

of the scheme. In addition, it is challenging to establish the causality between abatement and the ETS, as other factors may have influenced the development. Any conclusions therefore remain subject to uncertainty.

During the first trading period, emissions increased slightly from 2,012 billion tons in 2005 to nearly 2,050 billion tons in 2007, or less than 2 percent.<sup>82</sup> However, the first phase has been qualified as a 'learning-by-doing', meaning that any emission reductions that could have been accomplished would have been a bonus to the primary goal of putting the system in place.

Verified emissions in 2008 exceeded the free emission permit allocation by just over 10 percent. This excess was covered partly by purchases of auctioned permits and partly by purchases of CERs. Allocations for 2009 were also drawn on to cover the shortage. In spite of this, in 2008, the first year of the second trading period, emissions exceeded the target by 1.5 percent, even after allowing for CDM investments. However, in 2008 Europe was struck by the global financial crisis, slowing economic growth and, thus, emissions. Therefore, the shortfall could have grown larger if normal growth of the European economies had occurred.<sup>83</sup> The recession did not produce a sharp downturn in industrial production until the fourth quarter of 2008, meaning it is likely to have affected emissions much more in 2009 than in 2008.

The 3 percent decline in emissions in 2008 from 2007 was not markedly greater than the 2 percent decline in industrial production. This suggests that emissions were reduced very little by the scheme, at least in the first year of phase II. It is true that a decrease in the carbon intensity has been observed in the EU but that development began well before the introduction of the ETS.

A recent study from Centre for Policy Studies summarizes much of the research on the actual abatements resulting from the EU-ETS.



The paper states that, in spite of the modest absolute emissions reductions observed and described above, the ETS has led to abatement of significant magnitudes in each of the first three years.<sup>84</sup> The finding is based on an observed emissions-intensity improvement above historical trends. When looking at the two first years of the second phase, CEPS finds an even greater intensity improvement. Regression analysis used to try to determine to how large extent this has its roots in the ETS, rather than in other developments, shows that the ETS has effects on large but not small investments.

### Evidence of windfall profits

When a firm is able to pass through the carbon cost induced by the ETS while simultaneously being compensated for the carbon costs through free allowances, a 'windfall profit', i.e. an unexpected income, occurs. As allowances have primarily been distributed free of charge during the first phases of the EU-ETS, evidence of the passing through of carbon costs gives an indication of the prevalence of windfall profits.

At this stage, only a few studies look into empirical evidence of windfall profits from free allocation of emission allowances. Existing ETSSs are still young and the carbon price has often been very low, circumstances that complicate such analysis. Existing analyses generally focus on the mere existence of the passing through of carbon costs with less attention devoted to quantifying the resulting windfall profits.

Egenhofer et al (2011) have synthesized much of the empirical evidence on windfall profits from the EU-ETS.<sup>85</sup> Their conclusion is that total rents have been substantial, even when the carbon price has been modest. In fact, all technologies and all participants included in the EU-ETS, power and industry alike, benefited from ETS-related rents.

Windfall profits observed so far have been most evident in the power sector.<sup>86</sup> A study on the

German and Dutch liberalized power markets shows that generators have passed through most of the opportunity costs, between 60 and 100 percent, as expected, with aggregate profits totalling billions of Euros.<sup>87</sup> A summary of observed pass through rates in the power sector in different European countries shows that values are significant in all the studied cases, suggesting that the band-width for pass through can be quite large, varying between countries and periods.<sup>88</sup> Estimates vary from 30 to 100 percent if looking at average value. Reinaud claims that the steep fall in electricity prices observed in May 2006 can be directly attributed to the fall in CO<sub>2</sub> prices that occurred as market actors became aware of the over-allocation of allowances on the EU market, which is evidence of the importance of the passing through of carbon costs in this sector.<sup>89</sup>

Another empirical study focuses on the observed passing through of carbon costs in the cement-industry.<sup>90</sup> It concludes that the actual passing through was less important than the theoretical expectations and that it was lower than that measured in the electricity sector during the same period. The implication is that cement producers did not earn significant windfall profits from the EU-ETS in 2005. The authors give two possible explanations for this; first, cement producers might be constrained from raising prices due to a threat of competition from outside the EU, and second, producers may be willing and able to pass through costs but due to long contractual lags, price effects were not observable at the time of the study.

The results of the studies above, to some extent, confirm the assumptions made by the European Commission, who has identified sectors sensitive to carbon leakage based on criteria on increase in production costs due to the imposed carbon price and trade intensity. This list includes the cement sector based on the high cost increase caused by the carbon price, but excludes the electricity-generating sector. As the latter has proven to be able to

pass on the lion's share of the carbon cost, the sector is probably not likely to suffer significantly from carbon leakage; however, the former is evidence of the opposite, provided that the results hold true in a longer perspective.

### 3.3 Discussions on Auctioning vs. Free Allocation in the Wake of Phase III

There are a number of complications and inconveniences related to the use of free allowances. Most importantly, the free allocation of allowances represents a one-time transfer of wealth from the government issuing them to the entities receiving them. Except for the fact that this represents a cost to society, as resources that could have been used to fulfil other political goals are being transferred to the domestic industry, this may give rise to windfall profits, possibly distorting competition and trade.

Free allowances can encourage the continued use of inefficient plants, as a plant closure would, in most schemes, mean the loss of the (over) compensation that these free allowances constitute.<sup>91</sup> In parallel with the challenge of how to handle plant closures, there are issues related to new entrants into the ETS; creating new entrant reserves in proportion to the carbon intensity of new plants can bias the incentive towards more carbon-intensive investments.<sup>92</sup> When projected forwards, such distortions are amplified by the multi-period nature of the EU-ETS. There is a more general risk that if free allocations continue and industries expect future allocations to reflect recent emissions, incentives to reduce emissions will now be undermined.<sup>93</sup>

The main alternative to free allocation is auctioning. Undeniably, there are number of arguments in favour of auctioning<sup>94</sup> and it would likely resolve many of the issues arising under free allocation. First, it is a straightforward way of implementing the 'polluter

pays principle'. Second, it would reduce the distributional distortions and accompanying windfall profits that free allocation can create. An example of such distortions was an excess allocation of allowances to the manufacturing industry in the EU under phase II, at the expense of the power-generating sector. Third, it creates a level playing field for existing and new covered entities. Fourth, it gives a potential for reducing the impact of compliance on the economy as a whole if auction revenues are used to reduce more distorting taxes on investment or other taxes like labour income. Lastly, it can improve liquidity and transparency of the emissions market.

Arguments against auctioning include its difficulty to rally support among industry, especially if it has initially been granted allowances for free. The risks for leakage and distortions are also obviously more important.

In the post-2012 EU-ETS, auctioning will be the basic principle for allocating emission allowances: however, the concerns for carbon leakage and reduced competitiveness are indeed of crucial importance to member states and constituted the hardest nut to crack before a final compromise on this could be reached.<sup>95</sup> Overall, in the debates leading up to the decision, the industry was against the suggested move to auctioning as a means of allocating emission allowances, whereas environmental NGOs, government bodies and market intermediaries were in favour.<sup>96</sup> Stakeholders also disagreed on what the auctioning revenue should be used for. The business society advocated that revenues be recycled back to the industry while the proponents of auctioning wanted to see the funds invested in the promotion of carbon-friendly techniques and assistance to developing countries. Government bodies were split between climate earmarking and general government use.

## 4. FREE ALLOWANCES AS A POTENTIAL SUBSIDY- AN ECONOMIC PERSPECTIVE

Free allowances are a handy tool for policy-makers. For an environmental measure, they are generally quite attractive to the industry and although they constitute an opportunity cost to the government, they do not involve direct expenditure.

At the same time, the difference in government revenue from granting allowances free of charge or requiring emitters to purchase them can be extremely large; Wooders et al (2009) speak of billions of dollars per year in the EU or the US. This suggests that the public has a legitimate interest in asking if the policy is an efficient use of resources. In addition, as with any policy tool, there may be unintended consequences and the tools may fulfil, if at all, their aims with varying degrees of efficiency.

### 4.1 Is Free Allocation an Efficient Tool for Reducing GHG?

The central question in this paper is whether free allocation can constitute a subsidy, however, whether free allocation is capable of contributing to reducing emissions is a relevant question as well and related to both the legal and economic analysis of a possible subsidy.

First, let us recall that it is not the free allocation in itself that intends to reduce emissions but the carbon cost imposed through an ETS. An ETS may contribute to creating incentives for reducing emissions, both through the actual carbon price it creates and through the signal it sends about the need for technology change in order to accomplish a shift to a low-carbon economy. In addition to the ETS, a number of factors influence the level of emissions; for example, an economic crisis with reduced industrial output is susceptible of reducing emissions more rapidly and on a much more important scale than any policy tool.

As explained in Chapter 1, the idea behind allocating emission allowances free of charge is that the allowance represents an opportunity cost. Thus, irrespective of the mode of allocation, this implies that there is an incentive for the covered installations to reduce their emissions, as they could sell the excess allowances to make a profit. An EC survey of stakeholders indicated that many participants are indeed incorporating the value of allowances in making decisions, particularly in the electric utility sector where 70 percent of firms stated they were pricing in the value of allowances into their daily operations, and 87 percent into future marginal pricing decisions. All industries stated that it was a factor in long-term decision-making.<sup>97</sup>

Nevertheless, there are nuances to this relation. First, opportunity costs and actual outlays are two different things- typically, firms pay more attention to the latter. Firms with excess allocations would actually be under little direct pressure to cut emissions at all. Accordingly, data suggest that in the aggregate they have not done so.<sup>98</sup>

It is worth mentioning here that in order to achieve the intended opportunity cost and the related effects, it is necessary to have achieved an actual carbon cost on the market. A carbon price close to zero cannot be expected to induce the considerations described above.

Second, particularly in relation to grandfathering, there is a general risk that if free allocations continue and industries expect future allocations to reflect recent emissions, incentives to reduce emissions now will be undermined.<sup>99</sup>

Third, the ability of contributing to reducing emissions seems to be related to the type of cap. Faced with absolute caps, firms would always factor the effective cost of carbon

into their production decisions. For firms with output-based allocation, the effective cost of carbon they face reduces as a function of the allowances they are rebated; thus, the effective carbon cost could be near zero and firms would have little incentive to reduce emissions.<sup>100</sup>

In sum, the capacity of free allowances to contribute to lowering emissions depends on a number of factors, such as the method for determining the amount of allowances to be distributed to firms free of charge, the actual carbon cost, the type of cap and the level of the cap.

#### **4.2 Are Free Allowances Effective in Reducing Competitiveness and Leakage Impacts?**

One of the reasons for granting emission allowances free of charge is to reduce risks for distortions in competitiveness and carbon leakage.

If firms maximize profits, they will generally pass through much of the opportunity costs, irrespective of permit allocation rules, thereby making a profit.<sup>101</sup> Even in competitive markets, firms are likely to pass on parts of the opportunity costs, making profits at the risk of losing some market share.<sup>102</sup> This preference for profits over market share could result in a decline in domestic production and output levels over time.<sup>103</sup>

Wooders et al (2009) claim that “there is little empirical evidence to suggest whether or not free allowances would be effective. Economic theory strongly suggests that they will have little or no impact in the short term. In the longer term, little is known about how effective free allowances would be in encouraging producers to remain in countries with climate change policies and measures. There must be a strong suspicion that free allowances, which have the nature of a compensatory payment, will have little impact on competitiveness and leakage”.

Under intensity- or output-based caps, rebates of allowances reduce the effective cost of carbon below the allowance price in the market. This will intuitively reduce leakage and competitiveness concerns but will also reduce environmental effectiveness of the policy.<sup>104</sup> A low carbon cost reduces the incentive to abate emissions, thereby leaving the competitive position relatively un-altered.

#### **4.3 Can Free Allocation be Equivalent to a Subsidy?**

##### **What is a subsidy? A few words on definitions**

The reason why economists are interested in subsidies is because they interfere with free market pricing and can introduce distortions to comparative advantage. Basically, exports caused by long-term production subsidies to firms without a comparative advantage may harm firms operating in the same market, although they indeed do have a comparative advantage. While economists generally dislike subsidies for this reason, they usually consider subsidies to be less damaging to trade than tariffs and quotas. Also, they tend to favour subsidies to tariffs because they are visible in the government’s budget. They will receive more frequent critical review, with therefore less danger that they will turn into permanent features.<sup>105</sup>

There is no universally accepted definition of a subsidy.<sup>106</sup> According to the OECD, a subsidy, in general terms, is the “result of a government action that confers an advantage on consumers or producers, in order to supplement their income or lower their costs”.<sup>107</sup>

According to the OECD (2005), there is also a need to consider market price support in the form of border protection and government infrastructure provided for specific industries at less than full cost. It can be discussed whether this could be applicable to free allowances, as the ETS can be argued to be an infrastructure, in the sense of a facility,

provided by the public sector, where not all industries pay its full costs.

The WTO Agreement on Subsidies and Countervailing Measures (SCM) also provides a starting point for discussing subsidies, as it includes a legal definition of a subsidy. This definition, discussed in greater detail in Chapter 5, contains the following three basic elements that must all be satisfied for a subsidy to exist: (i) a financial contribution (ii) by a government or any public body within the territory of a Member (iii) which confers a benefit.

In this section, our focus is on determining whether free allocation could distort trade and competition from an economic perspective. Such a discussion is crucial to the legal analysis, as we shall see below. In order to proceed with the economic analysis, we will look at the elements of free allocation on a more disaggregated level. We will have a look at the general consequences of granting allowances for free, the case of windfall profits and of over-allocation, the case of new entrants and plant closures, and, lastly, the risk for bias among covered entities.

### **Different elements of potential subsidies in free allocation**

#### **1. Receiving allowances for free creates wealth**

Keeping in mind the opportunity cost of emission allowances, it becomes evident that a firm who receives free allowances will be in a stronger financial position than one who has to pay for them. Although the free allocation of emission allowances does not (initially) affect a firm's revenues, it does reduce the total costs compared to a situation in which allowances have to be purchased in an auction or compared to installations not enjoying free allocation.<sup>108</sup> Consequently, the firm will be better placed to invest in R&D, marketing, energy efficiency, new plants or any other priority that might prop up its market share

within the country where it faces a carbon cost.<sup>109</sup> A stronger financial position would also tend to result in secondary benefits such as lower costs of capital.<sup>110</sup> Referring back to the OECD definition, this altogether must undeniably be considered to be a subsidy effect; it is a government action that confers an advantage on certain producers.

This kind of support to carbon-intensive industries in particular (which are some of the main beneficiaries of free allowances in existing and suggested ETSs) should likely be controversial. In the longer run, and in a world where carbon costs are internalized at a broader scale, this consequence of free allocation will most likely become increasingly questioned.

#### **2. Over-compensation**

There seems to be at least two cases of possible over-compensation within an ETS, as mentioned above; first, when allowances are over-allocated, and second, when firms simultaneously pass costs through and receive free allowances.

Over-allocation means that a firm is allocated more allowances than it would need to account for its emissions. As those excess allowances can be sold, there is an obvious incentive for firms to overstate their needs for allowances, also thereby avoiding abatement efforts and investments.

The problem with over-allocation is particularly relevant when free allowances are based on grandfathering. When allocation is based on benchmarking or on actual output, allowances relate more directly to actual needs and performance in terms of emissions.

There seems to be a general perception that both theory and evidence tend to bias projection-based allocations upwards; firms simply know more about their production, emissions and investment intentions than regulators.<sup>111</sup>



The second case is when costs are passed through and firms are still being compensated for the carbon costs through free allowances, resulting in 'windfall profits'. As discussed above, this has been evident in the power sector, where up to 100 percent of the cost increase has been passed through

Over-allocation can be considered a net subsidy<sup>112</sup> and the same seems to hold true for over-compensation in the case of windfall profits. In both cases, firms get compensated for costs they do not in reality have, without any requirements to actually abate emissions.

If the case cited above, where some industries benefit essentially from lower costs, was considered to be controversial, the case of over-allocation, over-compensation and resulting windfall profits would be so to an even greater extent. Indeed, it is likely that these kinds of profits go well beyond the intention of policy makers whose primary aim is to reduce carbon emissions.

### 3. New entrants

There are two main reasons for setting aside allowances for new entrants; first, for reasons of equity. It does not seem fair to give allowances for free to some plants and make others within the same sector pay. Second, countries would not want to be at a disadvantage when competing for new investment. In a context of climate change, this is particularly true since new plants may very well be less carbon-intensive.

At the same time, there are arguments against reserves for new entrants. Some argue that if the objective of free allocation is to compensate existing assets for the impact of new regulation, it should not be required for new entrants.<sup>113</sup> Giving allowances for free to new entrants can be considered as an investment subsidy.<sup>114</sup> In addition, giving free allowances in proportion to the carbon intensity of new plants can bias the incentives towards more carbon-intensive investments,

something that would not be beneficial to the aim of reducing emissions. Benchmarking new entrant reserves on the basis of capacity could avoid the worst of distortions.

In practice, most governments set aside free 'new entrants reserves', which economically amount to an investment subsidy.

In Chapter 2, it was established that in the EU, there is a lack of harmonization with respect to new entrants. This diversity of approaches resulted in fuel-specific subsidies, which vary by country.<sup>115</sup> Research shows that the annual free allocations to a new natural gas combined-cycle plant would vary from zero allowances in Sweden to as much as allowances worth 11 million Euros in Germany, at a carbon price of 10 Euros.<sup>116</sup> At a carbon price of 20 Euros per ton, this would be equivalent to the fixed annual costs of the power plant. It is likely that subsidies of this magnitude affect investment decisions.<sup>117</sup>

In the case of the EU-ETS, the increased internal harmonization that will take place with respect to new entrants under phase III, may address some of these concerns. The question remains, however, how different treatment of new entrants under different schemes could impact competition.

### 4. Plant closure

The basic idea of a market-based policy instrument is to favour the most efficient firms and installations and to stimulate the least expensive abatement options. In an emissions trading scheme, where there is a price on carbon, installations are forced to recognize the economic cost of emissions. Installations with relatively lower environmental performance will face relatively greater costs associated with the use of emission allowances and should therefore give way to installations with higher environmental performance.

Sticking to that logic, it would make sense to keep the allocation unchanged, even in the



case an installation reduces economic activity or closes.<sup>118</sup> If it is profitable for the operator to close an installation and sell the allowances to a more efficient plant, this will be the efficient solution and the intended effect of the scheme.

Continuing to give away allowances to plants that are no longer active is politically sensitive; however, choosing the opposite alternative of withholding the free allowances in the case of closure would turn the allocation into a subsidy to production, as the firm earns the allocation if and only if it continues to operate the installation. In addition, withdrawing the allocation creates incentives for keeping inefficient installations running, an outcome that would clearly not be beneficial for climate change.

Relating this discussion to the described ETSs in Chapter 2, we can see that in major existing and suggested schemes, plants having ceased operations are generally not eligible for continued free allowances. Although in-depth analysis of each case would be necessary, it seems on an overarching level, as these schemes are susceptible of subsidizing inefficient plants.

##### 5. Bias between sectors

In section 2.1 it was mentioned that under the EU-ETS's Phase II, there was a bias in the allocation of free allowances in favour of the manufacturing sector at the expense of power-generating sectors. The rationale offered for the distribution was that the power sector could more easily pass on its increased costs to consumers than could manufacturing firms subject to international competition. Although this is perfectly reasonable from an economic perspective, this distribution practice was not uniform across countries and therefore capable of creating competitive distortions within the EU. Further analysis would be necessary in order to examine if and how such distortions could affect trade with third countries.

In Phase III of the EU-ETS, there will be increased harmonization in the allocating of emission allowances; hence, the described problem is likely to be reduced. A lesson could be drawn for trading partners with respect to emerging ETSs around the world to also remain vigilant towards the distribution of free allowances between sectors within the ETS.

##### What if free allocation is a subsidy?

In this section we have highlighted a number of ways in which the free allocation of emission allowances could constitute a subsidy. Even if some of these risks can be avoided through designing ETSs carefully, it is undoubtedly a fact that giving away large amounts of public resources for free to some sectors in an economy is likely to create tension and, possibly, to influence the economic behaviour of agents.

Subsidies are problematic in many ways. Often, they are inefficient, expensive, socially inequitable and environmentally harmful, and impose a burden on government budgets and taxpayers. Moreover, there is a risk that they distort prices and resource allocation decisions, altering the pattern of production and consumption in an economy. As a result, subsidies can have negative effects on the environment that are unforeseen, undervalued or ignored in the policy process.<sup>119</sup>

When it comes to their environmental impact, we have seen above that in spite of the fact that an ETS is about reducing emissions, and one of the rationales for allocating allowances free of charge is to contribute to this end by reducing the risk of carbon leakage, some of the subsidy elements related to free allowances could actually risk having a negative impact on the environment. Examples of this are that 'grandfathering' may discourage and delay investment in green technology, and that withdrawing allowances from plants as they close may spur carbon inefficient firms to stay in business.

With respect to the potential impact of free allowances on trade, it is difficult to draw general conclusions at this point. First, one of the rationales behind free allocation is indeed to *prevent* major changes in trade patterns, as international trade is one of the channels for carbon leakage. Second, the only real experience thus far to evaluate in the field of carbon pricing is the EU-ETS. This scheme is still young and the initial phases have been mostly about establishing the infrastructure before working towards real emission reductions, which is why the effects of the scheme have been moderate. In order to assess the effects on trade, it would also be necessary to establish the counterfactual to compare with; however, we have noted above that some industries have received allowances worth billions of dollars, sums that are large enough to be susceptible of influencing production patterns.

As we have seen, there are different subsidy elements related to free allocation. They would likely have different effects on trade, if any. In general terms, the first and second of the elements discussed above, of transferring important financial resources to heavily polluting industry, could contribute to lowering the prices of their products, thereby rendering them more price competitive on the international market. However, as firms are inclined to pass costs through, the development observed has rather been the opposite one, showing increasing prices combined with an increased wealth of companies. This wealth may, in the longer term, render companies more competitive in an international perspective, as they are better placed to invest in for example R&D and new technology.

The potential for free allowances to impact trade through this channel would need to be investigated further. In principle, it could boost domestic production, displace imports and have an adverse effect on other countries. However, demonstrating that imports are

being displaced, and linking such effects to free allocation, would be difficult and would need to be judged on a case-by-case basis.<sup>120</sup>

The investment subsidy discussed in relation to new entrants could potentially contribute to influencing investment decisions, thereby having an impact on trade patterns. Additionally, the potential bias between countries, where firms active within the same sectors are treated differently among countries, could possibly affect trade patterns as it would be capable of distorting competition. Bias between sectors might have a lesser effect, as different sectors (in the example above the manufacturing sector and the power-generating sector) do not compete with each other.

The element relating to plant closure would risk supporting environmentally and, therefore, economically inefficient plants through a production subsidy. As a parallel, it can be mentioned that the equivalent kind of subsidies in the field of agriculture (support in the 'amber box' in WTO jargon) is considered as the worst kind of support, from a trade perspective.

Empirical analysis will be necessary in order to assess whether the risks of subsidy elements identified above have indeed occurred and whether they have induced particular damage to international trade. The scope for such analysis, as well as the need for it is growing as the number of countries allocating emission allowances free of charge is increasing, and seeing that the first systems have been in effect for a few years, there is now a basis for evaluation.

If the practice of allocating emission allowances free of charge would prove to be capable of influencing competition between firms receiving respective not receiving free allowances, as the analysis above indicates, then it is possible that the implications for third countries would be quite broad. In the case of border measures, the main alternative

to free allowances for mitigating carbon leakage concerns, regulators would likely wish to target the exports from a few, big-emitting economies within a few sectors. Subsidies in the form of free allowances would on the contrary be less selective, as they could

potentially impact production decisions, prices, and the competitive position of the domestic industry. This could potentially have an impact on competitors in all trading partners, importers as well as exporters, including developing countries.

## 5. COULD THE ALLOCATION OF EMISSION ALLOWANCES FREE OF CHARGE CONSTITUTE A SUBSIDY? – LEGAL PERSPECTIVE

After considering whether the free allocation of allowances can constitute a subsidy from an economic perspective, we will examine the issue from a legal point of view.

### 5.1 The WTO Agreement on Subsidies and Countervailing Measures

The main WTO agreement dealing with subsidies is the Agreement on Subsidies and Countervailing Measures (SCM Agreement). This is one of the multilateral agreements on trade in goods included in Annex 1A of the Agreement Establishing the World Trade Organization (WTO Agreement). The purpose of the SCM Agreement is not expressly spelled out.<sup>121</sup> Moreover, the dispute settlement system thus far remained vague on the topic, indicating as its main aim only the regulation of ‘distorting subsidies’ and related unilateral remedies.<sup>122</sup> This partly reflects the controversial nature of subsidies and their control. Subsidies are ambivalent since they can both cause distortions to trade and competition and, often at the same time, tackle market failures or pursue other legitimate public policy objectives.

As discussed further below, the SCM Agreement develops Articles VI and XVI of the General Agreement on Tariffs and Trade (GATT), dealing with subsidies more generally,<sup>123</sup> by respectively providing detailed rules on (i) the power to unilaterally impose duties to counteract subsidized imports, and (ii) the obligations on WTO Members when granting subsidies that cause cross-border effects.<sup>124</sup> These effects can take place in different markets, resulting in different options for redress. A company that faces material injury in its domestic market due to imports from an allegedly subsidizing country can complain with its domestic authorities and seek the imposition of duties to offset (i.e. countervail) their effects. The use of such duties, referred

to as countervailing duties in WTO-jargon, are regulated under the SCM Agreement. The company may also lobby its government to take action under the WTO dispute settlement system to have the subsidies withdrawn or, if appropriate, their adverse effects removed. This latter dispute settlement track can also be used when the negative effects of subsidies occur not in the domestic market but in the market of the subsidizing country or in third countries, as the subsidies operate as a trade obstacle frustrating market access abroad. In such cases, the imposition of countervailing duties will not provide the needed redress, while dispute settlement offers alternative solutions.

The rules in the SCM Agreement distinguish two categories of subsidies. First, certain subsidies are strictly prohibited and, if granted, must be withdrawn (Article 3). These are export subsidies and subsidies contingent on the use of domestic inputs (called local-content or import-substitution subsidies). Second, the other domestic subsidies are not prohibited but can be actionable, meaning that, if found to cause ‘adverse effects’, they must be withdrawn or have these effects removed. The SCM Agreement (Articles 5-6) identifies three types of adverse effects: injury, serious prejudice<sup>125</sup> and nullification and impairment of benefits.<sup>126</sup> Further, in the presence of the conditions outlined above, the importing country can also use the countermeasures provided in the SCM Agreement, countervailing duties, to offset the negative impacts in the domestic market of both prohibited and domestic subsidies in its jurisdiction.

After this brief overview of the SCM Agreement and its main provisions, we can approach the specific issue of whether the allocation of allowances free of charge can constitute a subsidy and, if so, an objectionable (i.e. a prohibited or actionable) subsidy under the

current rules. The final part of the analysis will enquire whether there is any justification in the legal system that could permit the free allocation of allowances that has been held to otherwise be an objectionable subsidy.

#### The definition of subsidy and its objectionability

The first question is whether the free allocation of allowances constitutes a subsidy under the SCM Agreement. It should immediately be noted that, although useful, any assessment reached at the level of economic analysis cannot be lightly transposed in the legal context. The definition of subsidy under Article 1 of the SCM Agreement is a precise one, with various requirements that need to be satisfied.<sup>127</sup> Thus, the existence of a subsidy is predicated not only on the basis of the *economic effects* of the conduct of a government but it also rests on the positive proof of well-identifiable legal steps.

It is in this light that Stiglitz (2006)'s claim that the lack of ratification of the Kyoto Protocol would amount to a 'negative' subsidy should be assessed. In reaching this conclusion he noted that "[a] subsidy means that a firm does not pay the full costs of production. Not paying the cost of damage to the environment is a subsidy, just as not paying the full costs of workers would be". Stiglitz's economic language has to be translated in legal jargon and, most importantly, tested against a given legal framework.

Article 1 of the SCM Agreement reads:

1.1 For the purpose of this Agreement, a subsidy shall be deemed to exist if:

(a)(1) there is a financial contribution by a government or any public body within the territory of a Member (referred to in this Agreement as "government"), i.e. where:

(i) a government practice involves a direct transfer of funds (e.g. grants, loans, and equity infusion),

potential direct transfers of funds or liabilities (e.g. loan guarantees);

(ii) government revenue that is otherwise due is foregone or not collected (e.g. fiscal incentives such as tax credits) [footnote omitted];

(iii) a government provides goods or services other than general infrastructure, or purchases goods;

(iv) a government makes payments to a funding mechanism, or entrusts or directs a private body to carry out one or more of the type of functions illustrated in (i) to (iii) above which would normally be vested in the government and the practice, in no real sense, differs from practices normally followed by governments;

or

(a)(2) there is any form of income or price support in the sense of Article XVI of GATT 1994;

and

(b) a benefit is thereby conferred.

1.2 A subsidy as defined in paragraph 1 shall be subject to the provisions of Part II or shall be subject to the provisions of Part III or V only if such a subsidy is specific in accordance with the provisions of Article 2.

Article 1 thus provides that a subsidy shall be deemed to exist if there is, first, a 'financial contribution' by the government (which should be intended broadly to cover any 'public body' like a regulatory authority)<sup>128</sup> or 'any form of income or price support', and second, this results in a 'benefit'. Moreover, in order to qualify as an actionable or countervailable subsidy, the subsidy also needs to be 'specific' to certain enterprises or industries (Article 1.2



and 2 of the SCM Agreement) and needs to have ‘adverse effects’ (Articles 5 and 6 of the SCM Agreement) or cause material injury (Article 15 of the SCM Agreement). For prohibited subsidies, ‘specificity’ and ‘adverse effects’ are assumed, and no equivalent tests are thus required by the SCM Agreement.

We will now examine each step to determine whether the allocation of free allowances may amount to an objectionable subsidy. We commence from the definition of a subsidy.

### Financial contribution

The financial contribution under Article 1.1 (a) (1) of the SCM Agreement can exist if there is one of the following: a ‘transfer of funds’ (item (i)), ‘governmental revenue that is otherwise due is foregone or not collected’ (item (ii)), or ‘a provision of goods or services’ (item (iii)).<sup>129</sup> While the free allocation of allowances does not easily fit under the category of a ‘transfer of funds’, as this does not refer to any transfer of economic resources but rather to more specific forms of financial support like loans, capital injections and guarantees, the allocation could qualify as either a governmental revenue that is foregone, or as a provision of goods or services.

#### 1. ‘Government revenue that is otherwise due is foregone’

By not charging for the allocation of emission allowances, the government is somewhat foregoing revenue for the use of a natural resource that it controls. From a legal perspective, however, it is insufficient to rely on the consideration that the government *could* in principle have charged for the use of its resources but has not done so. The issue is whether this revenue would have otherwise been due. This requires a precise point of reference. As evidenced by the *US - Foreign Sales Corporation (FSC)* litigation, the ‘otherwise due’ language is however ambiguous and requires a complex counterfactual analysis ultimately resting on determining whether

the measure under examination is derogation from the norm.<sup>130</sup> The crux of the problem is the identification of the benchmark.

Relying on the case law on WTO Members’ sovereign prerogatives in tax matters (*US-FSC*), Bhagwati and Mavroidis reaffirm the prerogative of WTO Members to define their own environmental policy, for example to decide whether to join or not the Kyoto Protocol.<sup>131</sup> Subsidy laws do not aim as such to harmonize environmental policies at a global level, by forcing Members to accept the standards adopted by other countries<sup>132</sup> or requiring them to enter into an international treaty. The simple omission to adopt certain environmental standards, in the absence of binding and precise obligations in this respect, is not in itself a subsidy. The presence of an international standard only becomes relevant under subsidy laws if it gives rise to a clear prescriptive norm, which, as a matter of law, should be followed. This standard would be the otherwise due benchmark in our case. If this baseline required a payment for the allocation of emission permits, the decision of a government to allocate allowances free of charge would result in the foregoing of government revenue otherwise due.

There is no international point of reference or standard inasmuch as the UNFCCC, the Kyoto Protocol and the Cancun Agreements fail to provide an obligation to introduce an emissions trading scheme. More importantly, they do not touch upon the point of whether, in the context of such a scheme, allowances should be auctioned or otherwise sold. Considering this absence of binding international standards, we should look elsewhere.

This search could lead in two directions. One could refer to the already mentioned polluter pays principle (PPP) as a general principle of liability in environmental law, at both international and domestic levels.<sup>133</sup> Following this line of argumentation, if the prevailing norm is that those that pollute should be liable, to relieve a firm from paying for its emissions

would clearly run counter this principle.<sup>134</sup> In other words, using Stiglitz (2006)'s language, emissions costs, as production costs, should *normally* be borne by firms. This is what the PPP requires.

Assuming we can derive a normative benchmark from the PPP, its precise impact, however, depends on the absence of other devices to internalize the costs of GHG pollution. Accordingly, this general principle would be breached only if the free allocation of allowances results in an overall and substantial relief of emission costs. If the social costs of GHG pollution are internalized with other means, such as regulation or taxation, the fact that emission allowances are granted free of charge does not necessarily involve a lessening of environmental liability.

Alternatively, if the benchmark cannot be derived from a general principle like the polluter pays, it should be found in the specific legal framework of the emissions trading scheme. Thus, the general norm in domestic law with respect to allowances allocation is what needs to be established. At the current nascent stage, existing emissions trading schemes allocate virtually all allowances for free; however, the fact that at least some allowances are auctioned could possibly be considered as the 'otherwise due' scenario and offer a possible baseline. Further, the regulatory framework may provide that, at a certain point in time in the future, a larger share of allowances will be auctioned or otherwise distributed with a charge. An interesting legal question is thus whether this progressive phasing out of free allocation can help establish that the current scenario of free allocation is exceptional and the charge or price would be otherwise due. This is not an easy route, as the natural reading of 'government revenue otherwise due is foregone' seems to refer to the present.

One final issue is a measure's classification as tax revenue. Item (ii) of Article 1.1(a)(1) of the SCM Agreement seems to mainly refer to tax measures.<sup>135</sup> In fact, the prevailing reading

appears to link item (ii) *exclusively* to tax measures. This would mean that a positive conclusion in our case would depend on the possibility of considering the charge for allowances as a tax. However, the language of the law is sufficiently broad that one could alternatively argue that *any* instance where government revenue (hence not necessarily fiscal revenue) is foregone, is covered by item (ii). If that argument becomes acceptable, and the otherwise due benchmark has been identified and strayed from, the free allocation of allowances would fall within the scope of item (ii).

## 2. Provision of goods or services

In case one finds that the allocation of emission allowances free of charge does not qualify as a financial contribution as defined in item (ii), the provision offers one possible suitable alternative. Item (iii) of Article 1.1(a)(1) of the SCM Agreement lays down another form of financial contribution, namely where the government 'provides goods or services'. It should be noted that the two options provided by item (iii) are not mutually exclusive; there are in principle no reasons why, looked at from different perspectives, an emission allowance could not constitute a good *and* a service.<sup>136</sup>

Allowances could be considered goods;<sup>137</sup> they have economic value, not only because they can be allocated for consideration (that is financial reward or another form of economic return), but especially because if they are not needed for emissions, they can subsequently be traded in a market. A similar situation had been addressed in the *US - Lumber IV* dispute where the Appellate Body faced the question whether the permit to harvest lumber in certain Canadian Provinces' Crown land amounted to a provision of goods under Article 1.1(a)(1)(iii). The counter-argument presented by Canada was that the permit to reap a natural resource could not be equated to the actual, direct provision of the same resource. The Appellate Body, however, upheld the panel in concluding that the provision of

a permit to harvest a good *does* amount to the provision of a good, which is seemingly an appropriate reading of item (iii).<sup>138</sup> Reasoning otherwise would have meant an unduly restrictive construction of the term ‘provide’, which is in fact open-ended. This finding is particularly instructive for our analysis. The free allocation of emission allowances is in essence the provision of a permit to pollute the atmosphere, a natural resource, similar to the provision of a permit to harvest lumber analyzed in the *US - Lumber case*. Thus, based on the argument above, one can suggest that the free allocation of emission allowances would qualify as a provision of goods under item (iii).

With that said, one must also consider that emission allowances have value partly because they can be traded as securities; therefore, they can be aptly regarded as financial instruments. Thus, inasmuch as the free allocation of these allowances involves a transfer of securities, they can be assimilated to financial services.<sup>139</sup> For the purposes of subsidy rules, the characterization of emission allowances as goods or services does not change the final conclusion, as the SCM Agreement (item (iii)) applies to both of these cases.

### Income support

According to the SCM Agreement, a subsidy is deemed to exist if it amounts to a financial contribution or, alternatively, to “any income or price support in the sense of Article XVI of GATT 1994”, that is support “which operates directly or indirectly to increase exports of any product from, or to reduce imports of any product into”<sup>140</sup> the territory of the subsidizing country.

This limb of the definition of a subsidy is relatively unexplored. It has been noted that it is mainly limited to support in the agricultural sector;<sup>141</sup> however, it is a provision with a huge potential, particularly because of its broad and open-ended language. As a result, it is increasingly focused and relied on, particularly

for policy measures to fight climate change like feed-in tariffs.<sup>142</sup> Following this line of thought, in our case it could be argued that the allocation of allowances is a form of income support, particularly in one of the forms described in the economic analysis above such as a wealth increase, which may produce an impact on trade.<sup>143</sup> In sum, the original meaning of this language might well come out from the specific context of agriculture; however, against a relatively broad language, there is nothing to prevent its application to a broader category of measures sustaining the financial conditions of undertakings.

### Benefit

To qualify as a subsidy under the SCM Agreement, a financial contribution or a measure of income support has to confer a benefit. This requires establishing that the recipient is ‘better off’ than it would have been absent the alleged subsidy.<sup>144</sup>

The essence of the benefit conferred by free allowances would derive from the fact that the recipient firms do not pay what should be paid, whether what they should have paid is considered a price, a tax or compensation for damage to the environment.

In the context of the language of the SCM Agreement, if we are dealing with a form of ‘government revenue that has been foregone’ (item ii of Article 1.1(a)(1)), it is almost intuitive that, if revenue otherwise due has been foregone, the recipient benefits because having to spend less than under normal circumstances, by nature, confers a benefit upon the ‘recipient’ of the revenue otherwise due.<sup>145</sup>

If, by contrast, the allocation of allowances were considered a typical economic activity like the provision of goods or services (as under item iii of Article 1.1(a)(1)), the benchmark would usually be the marketplace.<sup>146</sup> In this case, the question is if the allowances would have been available for free under normal

market conditions. An interesting issue is whether these normal market conditions refer to an emissions trading scenario with full auctioning or, more radically, a situation with no market-based systems, meaning without an emissions trading scheme in place. It appears 'natural' to consider *existing* conditions as *normal* conditions, thus conditions available under the emissions trading scheme at issue or similar schemes (in the jurisdiction), including the allocation mode of allowances.

The next step - a step of particular relevance for determining appropriate countermeasures - is then the actual identification of these *market conditions*, an appropriate benchmark against which the advantage can be established and valued in economic terms. This, however, might prove difficult in the absence of reliable data due to the still recent and rare nature of emissions trading schemes. Because of the lack of data, one would need to establish a market baseline focusing on the government as a 'hypothetical market operator'. This is a complex task. Added to this we should consider the common complexities of the analysis of whether a measure confers a benefit, which are discussed in Box 1 below.

The economic analysis has exposed various elements of economic advantage<sup>147</sup> that can become relevant for the legal analysis - at least at the level of the determination of the benefit.<sup>148</sup> These elements are consequential or concomitant to the allocation of allowances free of charge.

The clearest consequence of free allocation is the improvement of the financial position of the recipient. Quite similarly, over-allocation and over-compensation may also be the beneficial by-product of free allocation and taken into account in subsidy analysis. Another dimension of advantage may come from the finding that free allocation may undermine the incentives to reduce emissions. In such a case, the advantage derives from the fact that the firms receiving the free allowances are not only relieved from the costs of the emissions

but also from the costs of the activities and investments necessary to be more efficient in their reduction.

By contrast, the extension of free allocation of allowances to new entrants or its withdrawal from closing plants are not, legally speaking, in themselves subsidies. The characteristic of the legal concept of a subsidy is not only a transfer of economic resources (which, from an economic point of view, may represent an investment or production subsidy) but a transfer of economic resources which is also an exception to the norm. Legally, the free allocation of allowances would be a subsidy because its free nature derogates from what would have normally occurred - i.e. an otherwise due tax is not collected, an otherwise due compensation is not paid, an otherwise due price is not disbursed. Accordingly, if allowances were given away only to existing plants and auctioned to new entrants, we would still have a subsidy but in favour of incumbents that benefit from free allocation.<sup>149</sup> Similarly, it is not the withdrawal of (free) allowances from closing plants that is objectionable as production subsidy but the allocation of allowances free of charge in the first place.

We can give a further example of a possible discrepancy between the economic and legal assessment. The bias in favour of certain sectors<sup>150</sup> may be perfectly reasonable from an economic perspective because it compensates for various circumstances and effects. As the analysis in Box 1 shows, however, this is not the legal approach, which prefers disentangling effects from justifications and analysing them in different steps. The fact that certain sectors pay for the allowances and others receive them for free may be sufficient to establish the existence of a subsidy - i.e. a deviation from a benchmark. The reasons underlying the differential treatment may come into play but only afterwards when the justification of that subsidy (which has also been found objectionable because of its negative effects) is considered.

Quite similarly, while discrepancies in allocation between different countries or regions participating in the ETS (for example with respect to the position of new entrants) may well distort in so far as they may affect investment decisions of firms active within the same sectors,<sup>151</sup> this should not be

automatically held to constitute a subsidy from a legal standpoint. What is still necessary to prove in the first place is that the free allocation operated in a given country derogates from a benchmark principle of auctioning which would generally govern the distribution of allowances in that ETS.

**Box 1: Determining a subsidy - the complexities of the benefit analysis<sup>152</sup>**

To establish whether the free allocation of allowances confers a benefit raises complex questions. As has been seen, the determination of the appropriate benchmark may be a challenging task. One further element of difficulty is that the scenario appears closely linked to the public policy objectives pursued by the government adopting an emissions trading scheme and deciding to allocate allowances for free. However, generally it is not accepted that public policy objectives be taken into account when determining whether a measure is a subsidy. In other words, competitiveness or carbon leakage concerns do not seem to be relevant when the commercial soundness of the allocation of allowances free of charge is considered.

That being said, two more sophisticated and perhaps more acceptable arguments, indirectly considering the measure's underlying concerns, can be put forward.<sup>153</sup>

One argument would take into consideration the complexity of the *economic* objectives, interests and choices confronting a government when allocating allowances. In this case, the position of the government would be paralleled to that of a market investor operating within a complex 'group' logic, not limiting its judgment to one-transaction-only or short-term considerations. For example, this private investor would take into account the risks, if proven, that certain companies relocate elsewhere, or lose market share to companies located elsewhere, as a result of their increased costs related to the emissions trading scheme. Such shifts in competitiveness represent a significant loss from a more general perspective since other economic activities may suffer as well from the decreased market share. In other words, the government may reasonably accept to collect less or no revenue from the allocation of allowances if this could avoid other, possibly more substantial losses, should changes in competitiveness take place.

Indeed, one of the main objectives allegedly pursued by the allocation of allowances free of charge is to compensate the competitiveness handicap of the companies and sectors participating in an emission trading scheme.<sup>154</sup> This could become relevant in the benefit analysis also from another economic angle - the second argument - if one argues that the advantage granted by the allocation free of charge does not really confer any benefit since it simply aims to compensate the extra-cost borne by the domestic industry for its participation in an emissions trading scheme. In other words, the benefit analysis under Article 1.1(b) of the SCM Agreement could be argued to aim at capturing a 'net' concept of benefit, i.e. one which discounts other special burdens or costs. Accordingly, in this case there would only be a subsidy if there were over-compensation in terms of the allowances freely allocated. The distinction between compensation and overcompensation would reveal whether the measure 'distorts' or in fact just 'corrects' a previous incongruity. Thus, even without acceding to a very analytic notion of a benefit linked to a "hypothetical market equilibrium without the presence of government"<sup>155</sup> where all possible tax, expenditure and regulatory policies granting advantages and disadvantages to the recipient are taken into



account (sound from an economic point of view but impracticable), one could interpret the benefit as the final positive value after discounting the specific costs or burdens *linked to the objectives of the alleged subsidy*.

Although such an argument may seem attractive and solid if we only focus on the economic effects of the measure, it is doubtful that it is in line with subsidy laws.<sup>156</sup>

First, it is clear since the GATT era that public policy objectives should be kept outside the determination of whether a measure of support constitutes a subsidy in the first place.<sup>157</sup> This is arguably an implication of the finding of the Appellate Body that “the marketplace provides an appropriate basis for comparison in determining whether a ‘benefit’ has been ‘conferred’ because the *trade-distorting potential* of a ‘financial contribution’ can be identified by determining whether the recipient has received a ‘financial contribution’ on terms more favourable than those available to the recipient in the market”.<sup>158</sup> In other words, the express reliance on the ‘trade-distorting potential’ of the financial contribution as the justification for the use of market benchmarks seems to reveal that the assessment of the benefit analysis should be based only on those economic considerations that may be indicative of distortions in the market.<sup>159</sup> Showing the potential distorting impact of a subsidy would thus be sufficient to conclude that there is a benefit. Public policy objectives, on the other hand, even those indicating that the subsidy actually ‘corrects’ and does not ‘distort’, are not taken into account at this stage of the analysis. In fact, including other considerations in an analysis that focuses on the determination of whether there is a trade distorting potential would render the analysis too complex for that stage. Ultimately this complexity could lead to ‘false’ determinations, indicating that no subsidy exists due to public objectives, a scenario that would be dangerous for the effectiveness of subsidy control.

Secondly, in subsidy law it is of crucial importance to distinguish the scope and justification analysis.<sup>160</sup> Phrased differently, the question is about distinguishing *what is covered* by the rules from *what is justified*. Different rules, i.e. rules on definition/objectionability on the one hand and rules on justifications on the other, provide different (more/less numerous, stringent, clear etc.) requirements and typically the burden of proof is allocated differently.<sup>161</sup> The applicability of different rules has important institutional and procedural implications. If a subsidy is deemed to exist and subsidy rules thus apply, supra-national bodies (Committee on Subsidies, possibly Group of Experts) are involved in the scrutiny of the measure, duties of notification may be present and consequences may derive from its lack of compliance. There is also a more general, systemic implication. If scope and justification are not duly kept separate, there is tangible risk of conflating every possible justification already at the level of the definition with, even in this case, the ultimate risk of evading the control and scrutiny provided by the system.<sup>162</sup>

Finally, the *symbolic* and *political* value of the distinction should not be overlooked. It does make a difference to conclude that ‘we have not granted a (distorting) subsidy’ in the first place, or ‘we have granted a (distorting) subsidy but this is after all justified’.<sup>163</sup> In the first case, subsidy rules do not apply at all but, in the second, they apply with a final positive outcome. Now, if subsidy control applies, governments and their constituencies are constrained and may feel vulnerable, and this is particularly apparent when sensitive and visible measures like subsidies are involved. An external source of regulation means that the decision of a subsidy’s implementation does not lie in the domestic sphere but elsewhere. It is a matter of power, and power (be it real or perceived) matters.

## Specificity

A subsidy is subject to WTO scrutiny only if it is specific “to an enterprise or industry or group of enterprises or industries” (Article 2 of the SCM Agreement). Specificity is a very pliable test that also shows a certain degree of expansion.<sup>164</sup> As mentioned, if a subsidy is found to be a prohibited subsidy, it is automatically deemed specific and thus not subject to the specificity-test described below.<sup>165</sup>

Article 2 of the SCM Agreement reads:

2.1 In order to determine whether a subsidy, as defined in paragraph 1 of Article 1, is specific to an enterprise or industry or group of enterprises or industries (referred to in this Agreement as “certain enterprises”) within the jurisdiction of the granting authority, the following principles shall apply:

- (a) Where the granting authority, or the legislation pursuant to which the granting authority operates, explicitly limits access to a subsidy to certain enterprises, such subsidy shall be specific.
- (b) Where the granting authority, or the legislation pursuant to which the granting authority operates, establishes objective criteria or conditions<sup>(2)</sup> governing the eligibility for, and the amount of, a subsidy, specificity shall not exist, provided that the eligibility is automatic and that such criteria and conditions are strictly adhered to. The criteria or conditions must be clearly spelled out in law, regulation, or other official document, so as to be capable of verification.
- (c) If, notwithstanding any appearance of non specificity resulting from the application of the principles laid down in subparagraphs (a) and (b), there are reasons to believe that the subsidy

may in fact be specific, other factors may be considered. Such factors are: use of a subsidy programme by a limited number of certain enterprises, predominant use by certain enterprises, the granting of disproportionately large amounts of subsidy to certain enterprises, and the manner in which discretion has been exercised by the granting authority in the decision to grant a subsidy<sup>(3)</sup>. In applying this subparagraph, account shall be taken of the extent of diversification of economic activities within the jurisdiction of the granting authority, as well as of the length of time during which the subsidy programme has been in operation. [...]

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2. Objective criteria or conditions, as used herein, mean criteria or conditions which are neutral, which do not favour certain enterprises over others, and which are economic in nature and horizontal in application, such as number of employees or size of enterprise.

3. In this regard, in particular, information on the frequency with which applications for a subsidy are refused or approved and the reasons for such decisions shall be considered.

As recently cautioned by the Appellate Body, the specificity test requires the concurrent application of the principles outlined in paragraphs (a), (b) and (c) of Article 2.1.<sup>166</sup> This is particularly true in the case of free allocation of allowances in emissions trading schemes where various considerations can be put forward.

One line of argument could be that the free allocation would not be specific because, although the emissions trading scheme has a narrow coverage, the free allowances are accessible to everyone within the system. However, the mere fact that an emissions trading scheme only applies to few sectors of the economy should suffice to conclude that the allocation of allowances free of charge, even if applicable to all industries covered by the system, is sufficiently specific. Although specificity is a “general concept, and the

breadth or narrowness of specificity is not susceptible to rigid quantitative definition” but should rather “modulate according to the particular circumstances of a given case”,<sup>167</sup> it seems that ‘how many’ sectors of the economy are benefited is not really important if the subsidy is not “sufficiently broadly available throughout the economy”.<sup>168</sup> It could even be concluded that the subsidy granted through free allowances is already *in law* (or *de jure*) specific since the laws establishing the emissions trading scheme expressly define their scope of application and, in so doing, they ‘explicitly limit access to the subsidy’ only to certain enterprises.

For the sake of reasoning, assuming that there is no *de jure* specificity, perhaps because the emissions trading scheme is fairly advanced and almost universal in its application, it could be argued that the legislation is also not specific because it ‘establishes objective criteria or conditions governing the eligibility for’ the free allocation of allowances. This, however, is a difficult battleground. The terms ‘objective criteria or conditions’ refer to “criteria or conditions which are neutral, which do not favour certain enterprises over others, and which are economic in nature and horizontal in application, such as number of employees or size of enterprise”.<sup>169</sup> This represents multiple tests of impartiality and rationality of an emissions trading scheme design and, most importantly for our analysis, of the free allocation of allowances within it. In this regard, it remains to be seen whether the energy and carbon emission intensity, which mostly represent the common denominator of the industries eligible for the allocation of allowances free of charge, may constitute criteria that are not only neutral and impartial but also ‘economic in nature and horizontal in application’.

Complainants may however be successful if they prove that one of the following circumstances is present: “use of a subsidy programme by a limited number of certain enterprises,

predominant use by certain enterprises, the granting of disproportionately large amounts of subsidy to certain enterprises, and the manner in which discretion has been exercised by the granting authority in the decision to grant a subsidy”.<sup>170</sup> The fact that this ‘dominance’ test is outlined after the ‘objectivity criteria’ seems to give pre-eminence to the former over the latter. In this regard, even in case of application of the emissions trading scheme and the free allocation of allowances across the board, it remains unavoidable that due to the *distinct factual pattern of carbon emissions*, only certain industries will mainly benefit from the free allocation of allowances. This, at least according to two of the indicators outlined above (predominant use and concentration of large part of the subsidy), points to the existence of specificity.

#### Adverse effects

Specific subsidies may be actionable if they cause adverse effects to the interests of other countries. Subsidized imports causing material injury to the domestic industry of the complaining country may also be subject to countervailing duty actions.

Articles 5 and 6 of the SCM Agreement provide various tests of adverse effects: (i) injury to the domestic industry, in the same sense as in the countervailing duty context, (ii) nullification and impairment of benefits, mainly frustration of tariff concessions and the market access opportunity other WTO Members could reasonably expect from them, and (iii) serious prejudice. Article 6 of the SCM Agreement defines serious prejudice in various forms: (a) displacement or impediment of imports of a like product of another Member into the subsidizing Member’s market, (b) displacement or impediment of exports of a like product of another Member from a third country market, (c) significant price undercutting of the subsidized product as compared with the price of a like product of another Member, significant price suppression, depression, or lost sales in

the same market, and (d) increase in the world market share of the subsidizing Member in a particular subsidized primary product.

These four tests under item (iii) show that subsidized products may cause harm in different ways. A common element of the scenarios of adverse effects is that the financial advantage deriving from the free allocation translates in production decisions, thereby affects trade at least in terms of lower prices or larger output, and, through this, harms competitors. It is clear, however, that as currently interpreted by the WTO dispute settlement system, the law does not always require that all these separate steps be proven.<sup>171</sup> Thus, in ‘injury’ cases, an effect on volumes and prices with a connection to the subsidized imports is generally sufficient. In serious prejudice claims, by contrast, the analysis seems to rely substantially on the competitive impact of the subsidy.<sup>172</sup>

Clearly, any assessment of the adverse impact on trade must be based on the actual scenario and must take into account various elements of the legal standard challenged; thus, a case-by-case analysis is required.

That being said, we can however make a few observations, also on the basis of the economic analysis performed above. It is undeniable that free allocation increases the financial wealth of the recipients. What is not clear, however, is whether this advantage translates into a distortion of international trade. Subsidy laws are not concerned with mere financial benefits but with *competitive* benefits, that is advantages that impact the competitive conduct of recipient firms and can thus harm international competitors, boosting domestic production at home or abroad, displacing foreign imports or exports. Should they be considered as subsidies, the same holds true for the other economic consequences of free allowances. Further, as the economic analysis generally suggests, any bias between firms

operating in the same sector, and active in international trade, is more likely to lead to adverse effects as compared to a bias between different, and not competing sectors.

The empirical evidence so far seems to indicate that firms receiving free allowances tend to pass on costs (rather than lowering them) with the result that, at least in the short term, no major trade effects have been detected. This may be different in a longer perspective as indicated in Chapter 4. However, since any impact on production and thus trade patterns can only be relevant for subsidy laws if duly substantiated, as we noted, what is needed is further empirical investigation which could identify the trade effects produced by free allowances, in terms of general trends as well as in the actual case under examination.

#### **Prohibited subsidies**

It cannot be excluded that, in certain cases, the allocation of allowances free of charge could be considered a prohibited subsidy. It has been noted in the beginning of this chapter that subsidies contingent on, that is conditional or dependent on, export performance are prohibited. Many sectors on the EU list of carbon leakage sensitive sectors, which are eligible for receiving allowances free of charge, have been included purely on the basis of their trade-intensity calculated from two variables: imports and exports.<sup>173</sup>

Clearly, the legal discussion would focus squarely on whether there is an element of contingency. In the case of the EU emissions trading scheme, while there is no doubt that free allowances are granted because of the trade activity of the recipient, an obvious argument against the finding of a prohibited subsidy would be that exports is only one of the two alternative, and seemingly equivalent, variables determining trade intensity and high trade intensity can be established solely on the basis of high imports.

## 5.2 Subsidy Justification

The possible finding that the free allocation of allowances constitutes a subsidy and that such a subsidy is in principle actionable or countervailable because it causes adverse effects or injury is not the final step of the legal analysis. It is important to examine the system's possibility for justifying the otherwise objectionable subsidy.

When considering the possible application of a *legal justification* for the free allocation of allowances, it is crucial to carefully distinguish the *economic* and *environmental justifications* of such practice.<sup>174</sup> This is important for two reasons. First, the rules may recognize only certain objectives, to the exclusion of others, and may subject their pursuit to certain conditions. Second, in the absence of current rules providing specific exemptions for climate change related measures, the underlying motives for subsidies found inconsistent with the SCM Agreement are pivotal for the discussion and design of possible prospective justification mechanisms.

One provision that might prove highly relevant in this regard is Article XX of the GATT.

### Article XX of the GATT and the value of the environment

Article XX of the GATT provides 'general exceptions' and its relevant 'environmental' parts read as follows:

Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures:

...

(b) necessary to protect human, animal or plant life or health;

...

(g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption;

Article XX of the GATT is a crucial provision for the functioning of the GATT. Since its inception in 1947, it provides the express recognition of other-than-trade values and the possibility for these values to trump trade under certain circumstances. Indeed, "[t]hese exceptions clearly allow Members, under specific conditions, to give *priority* to certain societal values and interests over trade liberalization".<sup>175</sup>

It is for this special role that, despite the name of 'general exceptions', the justifications of Article XX have consistently and increasingly been interpreted broadly, rather than like 'exceptions'.<sup>176</sup> The Appellate Body already showed in its early case law that Article XX is about balancing the 'general rule' that is breached and the 'exception' that is invoked as defence.<sup>177</sup> There truly is a 'weighing and balancing exercise' of different values central to the operation of this provision in each of its steps.<sup>178</sup> This is the typical hermeneutic process of general clauses where the protection of different values has to be assessed on a case-by-case basis.<sup>179</sup>

### The Applicability of Article XX to Agreements other than GATT - the case of the SCM Agreement

Over the past decade a lively discussion on the applicability of Article XX to WTO agreements other than the GATT has emerged. Thus far,



neither law nor jurisprudence provides a final answer. The relevance for environmental protection measures is clear. Can Article XX of the GATT justify such measures that are imposed in breach of the Anti-Dumping Agreement (ADA) or SCM Agreement? What about technical regulations, standards or sanitary or phytosanitary measures that are not fully in line with respectively the provisions of the Agreement on Technical Barriers to Trade or the Agreement on Sanitary and Phytosanitary Measures (SPS)? In absence of specific provisions on legitimate environmental subsidies, can Article XX of the GATT provide protection for subsidies to mitigate climate change?

The issue of the applicability of Article XX of the GATT to other WTO agreements is appearing more frequently before the WTO dispute settlement system; however, the indications of the case-law are unclear so far. We have obiter dicta, which do not represent more than slips of the pen (Panel, *Colombia - Ports of Entry*), *arguendo analysis* where the issue is substantially avoided (Appellate Body, *US - Shrimp/Customs Bond*), and special cases that do not seem to offer clarification beyond their specific context (Appellate Body, *China - Periodicals*). On its face, the decision in *China - Periodicals* might appear relevant because the Appellate Body concluded that Article XX of the GATT could apply to China's accession Protocol. It could, however, be argued that, although providing the first example of beyond-the-GATT application, this finding's significance is limited to the specific legal circumstances of the case, particularly the language of Article 5.1 of the Protocol recognizing "China's right to regulate trade in a manner consistent with the WTO Agreement". The linking factor here was the expression 'consistent with the WTO Agreement', representing a clear gateway to the GATT.<sup>180</sup>

Also, the issue was recently addressed in *US - Poultry*, where the question of the applicability to measures that were breaching the SPS Agreement was considered. The panel

concluded that a measure already found to be inconsistent with various provisions of the SPS Agreement, which expressly elaborates Article XX(b) of the GATT, could not be justified by then having direct recourse to that general exception. This conclusion is a natural consequence of the fact that the SPS Agreement directly and admittedly develops Article XX(b) of the GATT exhaustively.<sup>181</sup> Thus, neither ruling provides a definite answer. As a consequence, other cases will have to be decided on their merits and on the specifics of the relationship between Article XX of the GATT and the other WTO agreement at issue.

Article XX has a natural expansiveness, because of its central position in the GATT, its general and broad wording, and its policy value. This means that its applicability to at least other WTO agreements regulating trade in goods should be considered with attention.

Leaving aside for now literal<sup>182</sup> and systemic arguments, it is clear that at a *policy* level, the application of Article XX of the GATT may be desirable, particularly if a gap or lacuna is found in the system. The protection of the environment and the fight against climate change are crucial objectives and various policy measures may be adopted to pursue them. It would be incoherent if certain measures restricting trade would be justifiable while others would not, and this differential treatment would depend on an arbitrary distinction of the type of measure chosen. Howse (2010) highlighted this incoherency with respect to climate change subsidies, noting that, from a narrow trade perspective, it would be paradoxical if Article XX of the GATT is not applicable to subsidies but is applicable to other arguably more trade-distorting measures like quotas.<sup>183</sup>

Even though the applicability of Article XX of the GATT to other WTO agreements may be, *technically possible* and *policy-wise desirable*, it would certainly be *politically troublesome*. If inaction in climate and trade negotiations persists, the Appellate Body will eventually

need to take the lead and decide on the disputed issues. The strain put on the WTO dispute settlement system may be significant, as it would have to deal with uncertain language and perform difficult and sensitive balancing acts. However, despite these considerations, the WTO dispute settlement system has compulsory jurisdiction over disputes under the covered agreements and the duty to solve any dispute subject to it makes this responsibility unavoidable. Finally, it cannot be excluded that judicial action resulting in politically sensitive and not fully acceptable outcomes may spur legislative action through authoritative interpretation or treaty reform.

Four aspects should be noted regarding the SCM Agreement. First, as noted above, this instrument is directly connected to the GATT by 'increasing and improving' the disciplines of both Articles VI and XVI of GATT dealing with subsidies and countervailing measures.<sup>184</sup> This should be set in the context of the fact that the WTO is a single undertaking and its provisions are part of an 'integrated' legal system.<sup>185</sup> Second, there is no language in the SCM Agreement (or elsewhere) directly interfering with the application of Article XX of the GATT to subsidies. Third, as a general matter of interpretation, there is no need for an express reference to give way to the application of a provision, particularly if this has a general nature.<sup>186</sup> Fourth and finally, there are no indications in the negotiating history of the SCM Agreement that Article XX of the GATT should not apply.

Up to the end of 1999 there were specific provisions (Articles 8 and 9 of the SCM Agreement) recognizing that certain subsidies, including certain environmental subsidies, were overall beneficial and hence were non-actionable as well as sheltered from countervailing duty action.<sup>187</sup> The absence of an extension of these rules could be seen as a decision that exceptions should not exist under the SCM Agreement. However, one could equally argue that, with the expiry of this provisional category of subsidies, only the

special discipline of exceptions of the SCM Agreement has disappeared, giving way to the applicability of the general exceptions of the GATT. The crux of this argument is that the general exceptions of the GATT should apply to rules that, as seen, find their origin within the GATT itself.

Another argument can be advanced. This counters the narrow scope of Article 8 of the SCM Agreement with respect to the environment. It could be contended that, even when Article 8 was in force, there was not really a common purpose and subject matter between the broad 'environmental exceptions' of Article XX and the confined remit of Article 8,<sup>188</sup> with the result that Article XX could in principle have applied to subsidies not specifically permissible under the SCM Agreement. In other words, while it is clear that the SCM Agreement develops Articles VI and XVI of the GATT, it is not fully clear that Article 8 of the SCM Agreement was developing Article XX of the GATT in the context of subsidy discipline.<sup>189</sup>

Whatever the merit of this argument, the expiry of Article 8 reinforces the legal and policy argument in favour of applying Article XX of the GATT to subsidies that are clearly contributing to tackling climate change. As noted above, the confirmation of the applicability of GATT Article XX to other WTO agreements via a judicial route may be politically troublesome; however, paired with the slow progression of negotiations in climate and trade, it may constitute the only alternative to tackle an undesirable lacuna in the system. The urgency of action is confirmed by recent developments in litigation.<sup>190</sup>

#### Article XX and Free Allowances

In the *US - Gasoline* case, the Appellate Body presented the two-tiered approach that should be used under Article XX of the GATT.<sup>191</sup> According to this test, first, the existence of a provisional justification of the measure at issue will have to be determined under one

of the paragraphs of Article XX. Second, if such a provisional justification is established, the application of the measure will have to be considered under the chapeau. While the first step analyzes the measure itself, in the second step it is the application of this same measure that is under scrutiny. More specifically, the chapeau of Article XX requires that the measure is “not *applied* in a manner which would constitute a means of *arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade*”.<sup>192</sup> The Appellate Body established in *US - Gasoline* that the purpose and object of the chapeau is “the prevention of abuse of the exceptions”<sup>193</sup> of Article XX. Later it elaborated that “a balance must be struck between the right of a Member to invoke an exception under Article XX and the *duty* of that same Member to respect the treaty rights of the other Members”.<sup>194</sup>

Logically, in the discussion below it is assumed that the allocation of allowances forms an objectionable subsidy.

### 1. Environmental justifications

Article XX of the GATT includes two ‘exceptions’ with environmental relevance, paragraphs (b) and (g) as quoted above. Paragraph (b) concerns measures that are “necessary to protect human, animal or plant life or health”; thus, this covers not only public health policy measures but also ‘environmental’ ones. Paragraph (g), on the other hand, refers to “measures relating to the conservation of exhaustible natural resources”. Although partly overlapping, the focus of the two exceptions differs slightly. Due to its language, reliance on paragraph (b) in order to justify climate change measures is likely to require evidence of the contribution of the measures to the protection of human, animal or plant life or health specifically.<sup>195</sup> In addition, the key terms ‘necessary to’ in paragraph (b) and ‘relating to’ in paragraph (g) invoke different tests, and the former seems to be stricter than the latter.<sup>196</sup> However,

the current interpretation of necessity as a ‘weighing and balancing exercise’, where a considerable degree of deference is given to Members particularly with respect to the level of protection decided, does not seem to represent an excessive obstacle for the protection of the relevant values.

The skeletal language of Article XX of the GATT is receiving increasingly full meaning through the jurisprudence of the Appellate Body. Interestingly, the most significant body of case law on Article XX has developed with regards to the two environmental exceptions discussed here.<sup>197</sup> In so doing the Appellate Body is operationalizing the recognition of ‘sustainable development’ in the preamble of the WTO Agreement and, by borrowing from international environmental law, connecting WTO law to broader international law.<sup>198</sup>

If we apply GATT Article XX to the premise that the allocation of allowances free of charge is an actionable or even prohibited subsidy, there are two possible lines of defence that both revolve around the alleged environmental merits of free allocation. The first argument would rely on the *contribution of free allocation to the reduction of GHG emissions*, however, the previous economic analysis shows that, at best, free allowances are as efficient as paid allowances when regarded as opportunity costs. At worst, they may reduce the incentives to reduce emissions, thus going squarely against the proposed aim of emissions trading schemes. The second argument would rely on the prevention of *carbon leakage* as a justification. This seems to be the most logic line of defence and will therefore be analyzed for its merits below.<sup>199</sup>

The Appellate Body has already found in *Brazil - Tyres* that paragraph (b) on *inter alia* public health could also cover climate change.<sup>200</sup> As mentioned above, proof of the measure’s contribution towards tackling climate change through preventing carbon leakage would not be enough because it is likely that some evidence of the contribution of the measure

to the protection of human, animal or plant life or health specifically is also required. This does not seem to pose a real problem though, as there is abundant evidence of the detrimental effects of climate change on, for example, biodiversity.

That being said, the necessity test of paragraph (b) requires balancing the environmental objective pursued and the contribution of the measure to that objective on the one hand with the restrictions on trade on the other. Although climate change would certainly represent an important objective, lowering the standard of proof, some tangible evidence of the contribution of the measure to its fight should always be put forward. This means that it will both have to be shown that the measure contributes to preventing carbon leakage and that preventing this indeed does contribute to addressing climate change. Crucially, the Appellate Body has acknowledged that the contribution of certain environmental measures, like climate change measures that often operate within a comprehensive set of policy actions, cannot be evaluated in the short term, but only with the ‘benefit of time’.<sup>201</sup>

We should recall from Chapter 1 that there is no strong evidence supporting carbon leakage claims. Even assuming that the country at issue aims for a very high level of environmental protection, it is clear that both the case of carbon leakage and the contribution of free allowances to addressing it should thus be properly substantiated.<sup>202</sup> The contribution of preventing carbon leakage to fighting climate change is however not apparent. Carbon leakage is never expected to be 100 percent, meaning that leakage will never completely offset the emission reductions achieved by the emissions trading scheme. Moreover, and more generally, a global restructuring of production might be necessary to mitigate climate change in the most effective manner, and this would indeed entail carbon leakage.

Broadly analogous considerations can be made if the exception of paragraph (g) is

considered. Importantly, the Appellate Body in *US - Gasoline* has concluded that clean air can be protected under this exception.<sup>203</sup> The ‘relating to’ test is admittedly lower than the ‘necessity’ test, but this does not exclude that a ‘real and close’ relationship between ‘means and end’ should be established.

## 2. The chapeau of Article XX

Following the two-tier approach set out in *US - Gasoline*, the objectives of the measure are not only considered in a first step of the analysis of Article XX, but also in a second step where the measure’s application is considered under the chapeau. The chapeau requires an analysis of the “causes and the rationale of the discrimination”.<sup>204</sup> A measure may ultimately be justified only if it is applied in line with its legitimate objective.

The requirement that the measure should not be applied so as to arbitrarily and unjustifiably discriminate cannot be equalled to the test of inconsistency of the most-favoured-nation and national treatment provisions. They must and do have a different meaning.<sup>205</sup> What is proscribed is the *arbitrary* and *unjustifiable* discrimination with regard to *how the measure is applied*, not discrimination *per se*. Further, this discrimination should be established ‘between countries where the same conditions prevail’, not only between different exporting countries but also between importing and exporting countries.

Importantly, the Appellate Body has established that the phrases ‘arbitrary discrimination’, ‘unjustifiable discrimination’ and a ‘disguised restriction on international trade’ impart meaning to one another and serve the same purpose of preventing abuse and illegitimate use of the exceptions.<sup>206</sup> For the current analysis, this means that these phrases and the consistency of the measure at issue with them do not have to be discussed separately.

Case law reflects more concrete criteria used to assess if the application of a measure is in line with the chapeau. Three important ‘groups’ of



such criteria will be discussed here. First, the Appellate Body has stressed the importance of applying a measure that allows for an inquiry into its appropriateness regarding the conditions prevailing in exporting countries.<sup>207</sup> As such, it is crucial that a measure provides flexibility, by accepting *comparable* measures abroad as a basis for exempting countries from the application of the trade-restrictive measure.<sup>208</sup> Second, the concepts of 'due process' and fairness have been taken into account under the chapeau.<sup>209</sup> It is important that in the application of the measure, decisions are taken with the use of objective and transparent criteria.<sup>210</sup> Third, in order for a validation under the chapeau to be possible, it is vital that the means of international cooperation is adequately explored and good faith efforts have been made to negotiate an international agreement.<sup>211</sup>

The phrase 'between countries where the same conditions prevail' can be of great importance in the context of climate change measures, as shown by the following two examples. First, there is a question of whether the notion of 'prevailing' conditions is in conflict with the UNFCCC principle of common but differentiated responsibilities that allows different reduction commitments, and thus different treatments on the basis of historical - not prevailing - conditions. The second example relates to the need of providing flexibility in the application of a measure, as established by case law. In the application of the measure, it is important to ensure that it is not 'closed' but instead 'open' to comparable policy measures of other countries, one of the main lessons of the *US - Shrimp* litigation.<sup>212</sup> In the case of emissions trading schemes, it is key to ensure a transparent, non-discriminatory and well-designed 'linking' with other schemes, or, in their absence, with other policy measures that aim to achieve the same objective of emissions reduction. The legality of various national climate policy measures may eventually depend on this. The practical difficulties to determine and compare the effectiveness of

different regulatory systems and tools may indeed be considerable, but attempts towards this end need to be made. Good faith efforts and practical cooperation between countries in this respect may also constitute an additional factual element ensuring the WTO consistency of the measure, and, more radically, may contribute to creating a positive international environment to the solution of the climate change challenge.

The fact that the EU-ETS legislation limits the possibility of concluding linking agreements with third countries only to countries listed in Annex B of the Kyoto Protocol that have ratified the Protocol<sup>213</sup> could prevent a justification under GATT Article XX. The chapeau of this provision clearly requires that equal treatment in the application of the measure should concern countries 'where the same conditions prevail'. The lack of ratification of the Kyoto Protocol, the most important international climate change agreement, is a significant legal, political and environmental condition that could ultimately allow a difference in treatment. The lack of recognition finds its main motive in the exercise of political pressure on the parties that have not ratified the Protocol to do so.<sup>214</sup> Bhagwati and Mavroidis (2007) have noted the possible relevance of the principle established by the Appellate Body in *EC - Tariff Preferences*, though this did not concern the chapeau discussion directly.<sup>215</sup> In this case, the granting by the EC of preferences to developing countries was conditioned on the adoption of anti-drug production policies. The Appellate Body concluded that discriminatory preferences are WTO consistent if they are based on 'objective criteria'. The argument here goes on to say that the signing of the Kyoto Protocol may well be considered an objective criterion to discriminate between countries. However, at the same time, simple reliance on the signing of an international agreement - without considering the policy measures adopted at the domestic level - may be unreasonable. If there is an emissions trading scheme that could be linked to the EU-



ETS, then this other country *is*, irrespective of any international commitment, undertaking climate change measures. Excluding such a country from inclusion into the EU-ETS would not seem justifiable.<sup>216</sup> This would not make any environmental sense, and, under the chapeau of Article XX of the GATT, no sense from a trade law perspective either.

Even though linking an emission trading scheme is indeed a way of recognizing foreign climate change mitigation efforts, the important question remains if the free allocation of allowances specifically also takes into account foreign mitigation efforts. The problem is that free allowances can only be allocated to those installations participating in the emission trading scheme. Consideration of comparable efforts is further restricted by the fact that, in contrast to border measures, it would be more difficult to shield firms in foreign countries from the effects of subsidies like free allowances on the basis of their mitigation efforts and resulting carbon prices. In this sense it could be very difficult for a country to bring the allocation of free allowances in line with the chapeau of Article XX.

Additionally, in order for a validation under the chapeau to be possible, it is important that allowances are not allocated for free without an inquiry into other ways of tackling carbon leakage through the means of international negotiations and cooperation. In other words, the mere automaticity of free allocation without showing any attention to the broader picture of international policy and discussions with trading partners on the issue may lead to the conclusion that the differential treatment inherent in subsidization is arbitrary and not justified. Lastly, it would be important that the criteria used to determine the beneficiaries of the free allocation of allowances, and those used to determine the amount of allowances allocated free of charge, are transparent and objectively applied.

Finally, even if grounded, competitiveness concerns cannot find any shelter under any of

the exceptions of Article XX of the GATT. If this is the main or exclusive reason underlying the free allocation, then the only avenue is law reform.

#### **A new justification?**

If the ‘dispute settlement’ approach exclusively relying on the application of Article XX of the GATT is not accepted<sup>217</sup> but consensus emerges on the need to shelter the allocation of allowances free of charge from subsidy challenges, then the introduction of a specific justification recognizing the legitimacy of certain subsidies may be considered. This recognition may take various forms. Hufbauer et al (2009) have suggested that WTO Members could decide to adopt a waiver to WTO obligations with respect to a forthcoming climate agreement. Although a waiver does not require a consensus of all WTO Members as a three-quarter majority is sufficient, it may nonetheless be difficult to be agreed on. Further, it would be only temporary. Alternatively, a plurilateral code could be entered into where the parties “may commit to a set of rules that is binding among them and can be enforced in WTO dispute settlement”.<sup>218</sup> If not viable within the WTO because it would still need to be approved of by every Member, this could be done outside its realm with the consequence, however, of potentially losing the benefits of the WTO dispute settlement system.

Finally, another avenue could be a revamped subsidy discipline in the SCM Agreement or a solution as part of a specific Energy Framework Agreement.<sup>219</sup>

In this regard, various circumstances shaping both the approach to and the content of the justification should be considered. First, as noted above, the competitiveness and carbon leakage concerns that are behind the allocation of allowances free of charge are to a large extent dubious and are not currently supported by strong empirical evidence. Second, free allocation clashes with

important environmental policy principles like the 'polluter pays principle' and has caused undesirable effects like windfall profits. Further, it may preclude the incentives of an emissions trading scheme to function as efficiently as they would if allowances were charged. Third, allocation of allowance free of charge may to some extent be necessary to make emissions trading schemes politically acceptable.

In the light of these circumstances, the following principles may inform a prospective justification that would combine environmental and competitiveness concerns with *real politik*.

First, the express statement that auctioning is the rule and free allocation the exception should be included. This important affirmation would guide the interpretation of the specific conditions of the justification and would further constitute a significant benchmark in determining the existence of a subsidy in the first place.

Second, the balance underlying the justification and its conditions should be informed by the principle of sustainable development, as included in the preamble of the WTO Agreement. This would, for example, mean to require that the design and application of the measure are such as to effectively create incentives to reduce GHG emissions. Ultimately, this would mean setting the legal justification in line with the fundamental policy criterion that the polluter should pay and the environmental objective of ETS mechanisms, i.e. the reduction of GHG emissions.

Third, in the light of their exceptional character, the justifications should be temporary and carefully designed. The timing and modalities for the phasing-out of the free allocation should be clearly set. In addition, the justification for free allocation (carbon leakage and distortions in competitiveness) should materialize in specific provisions, requiring plausible proof in terms of harm or threat of harm to the domestic industry or the environment.

## CONCLUSIONS

The rationale for distributing emission allowances free of charge is to ease the phasing in of a carbon cost for concerned industry and to lessen the risks for carbon leakage. Although some allowances are distributed for free, firms will in theory factor in their value in production decisions. This will create incentives for abating emissions, as firms could sell the excess allowance.

Existing ETSs rely greatly on the free allocation of emission permits. In many cases, the free allocation will eventually be phased out and emission permits will increasingly be auctioned, except in sectors sensitive to carbon leakage.

The practice of distributing allowances free of charge has many advantages; it is quite acceptable to the concerned industry, does not imply direct costs to the government, and is not as provocative to third countries as other options to address leakage, like border measures. However, when looking at free allocation more closely, several questions arise, although focusing on the following issue is most important: does free allocation actually contribute to set a price on carbon thereby creating incentives for reducing carbon emissions, and does it effectively address the concern of carbon leakage? Interestingly, answers to these two questions lack a clear, definite yes. Rather, the effectiveness of the measures depend highly on their design, particularly on the importance of the cap type and the mode of determining the levels of allowances freely allocated.

In this paper we focus on the possibility that allocating emission allowances free of charge could constitute a subsidy. In the economic analysis, we look at different elements of free allowances, discussing the risks that they function as subsidies and thereby may influence international trade.

First, we discuss the wealth generated within industry by free allowances, as these constitute a transfer from government to industry. Such

a transfer will result in the firm being better off, which is likely to be positive for the firm's competitive position in the long run.

We also look at cases of over-compensation. This has been prevalent in the case of the EU-ETS, and seems difficult to avoid as long as allowances are calculated using grandfathering. Over-compensation is intuitively a subsidy, as it is compensating industry for costs it does not have. This, once again, will allow a firm to strengthen its competitive position, possibly having an impact on trade.

With respect to new entrants on the market, as well as actors exiting the market, the design of the ETS is crucial to avoid distortions in competition. Our analysis shows that it is possible to avoid some distortions; however, policy-makers must be prepared to make decisions that, at first glance, seem counter-intuitive and may well be unpopular among their constituencies.

Lastly, our analysis shows that differential allocations among sectors of the industry may create distortions in competition, as has been the case in the early stages of the EU-ETS.

As ETSs are increasingly being discussed in countries all over the world as a tool for abating carbon emissions, it is necessary to draw lessons on existing schemes. This is true both for regulators designing the schemes and for actors in third countries who may be concerned by the effects of these schemes. Contrary to border measures designed to target a limited number of countries, the effects of free allowances can be considerably broader, as no trading partner could be exempt from the effects of a subsidy to producers in the carbon-retrained economy; therefore, solid empirical analysis of the growing evidence on the impacts of ETSs, particularly free allowances, is needed.

The economic analysis has paved the way to the legal analysis. Taking stock of the economic findings, we have assessed the free allocation

of allowances against the legal requirements of the definition of a subsidy in the SCM Agreement and considered whether this subsidy could be actionable or countervailable under the current rules.

This has required us to determine whether the allocation of allowances free of charge corresponds to one or more of the forms of support covered by Article 1.1(a) of the SCM Agreement. The arguments in support of, and against, the qualification of free allowances as involving the foregoing of government revenue otherwise due, the provision of goods or services, or a form of income support have been duly considered. The end result has been that there are no fundamental obstacles precluding the classification of the free allocation of allowances into one of these elements.

The analysis has then shifted to establishing whether free allowances may confer a benefit. The common sense answer that inevitably a free distribution is advantageous had to be confronted with the more demanding requirements of the legal definition of a subsidy. The importance of the definition of the appropriate benchmark has been highlighted, as well as the interplay with the economic benefits conferred by free allowances and the policy objectives pursued with free allocation.

The two next steps of the examination have taken us to positively assess the claim that free allocation of allowances may be specific to certain enterprises or sectors, as required by Article 2 of the SCM Agreement, and to consider whether the still unclear economic impact of free allowances meets the specific legal requirements of the tests of adverse effects and injury which make the subsidy ultimately actionable or countervailable. As indicated by the economic analysis, the conclusion was that further empirical investigation is needed and that any definitive assessment can only be carried out on a case-by-case basis.

The conclusion that the free allocation of allowances may, under certain conditions,

constitute a subsidy under WTO law, and an objectionable one, has led to enquire the crucial issue, going beyond subsidy laws, of the existence or desirability of a legal justification.

After acknowledging the lapse of the category of non-actionable subsidies under Article 8 of the SCM Agreement, the focus has shifted to a question of huge systemic relevance; the applicability of the general exceptions of GATT Article XX to subsidies adopted to fight climate change, in the present case free allowances. Every step has been assessed from the general issue of the applicability of Article XX beyond the GATT in general and to the SCM Agreement in particular, to whether the exceptions under paragraphs (b) and (g) and the conditions of the chapeau could be met.

The outcome of the analysis is that there are no decisive legal obstacles to the application of GATT Article XX to climate change subsidies and that, in presence of a clear lacuna in the system, this move may be policy-wise desirable. It has however been acknowledged that leaving the solution of the problem to the compulsory jurisdiction of the Appellate Body may put the WTO dispute settlement system under considerable strain and end up being politically troublesome. A judicial decision may however function as a catalyzer of political impulses leading towards law reform.

This has led us to briefly consider what options for law reform are available and outline the main principles that should guide a new justification reconciling competitiveness and environmental concerns with political considerations.

In conclusion, against the background of both the legal and economic analysis above, it might be worth developing a set of guiding principles or a "best practice" for emissions trading schemes and the use of free allowances. This would ensure that such measures are efficient and effective in addressing climate change, while minimising adverse effects.

## ENDNOTES

- 1 Grubb and Neuhoff (2006).
- 2 Ibid.
- 3 IATA (2007).
- 4 Wooders et al (2009).
- 5 Ibid; Reinaud (2009).
- 6 Reinaud (2008).
- 7 <http://www.ceps.eu/taskforce/benchmarking-eu-ets-and-beyond>.
- 8 OECD (2010).
- 9 Directive 2003/87/EC has been subsequently amended by Directive 2004/101/EC, Directive 2008/101/EC, Regulation (EC) 219/2009, and Directive 2009/29/EC.
- 10 Ellerman and Joskow (2008).
- 11 Directive 2008/101/EC amending Directive 2003/87/EC.
- 12 Stern (2006).
- 13 Also in sectors not covered by the ETS, emission cuts need to be made in order for the EU to be able to achieve its reduction target. The target for these sectors has been set to 10 percent below 2005 levels in 2020, as compared to the reduction requested from the ETS of 21 percent below. The EU members have agreed on a burden sharing agreement between the member states. According to this agreement, member states all have individual targets expressed as a percentage, averaging at -10 percent.
- 14 For more information about related French initiatives, see for instance EurActiv.com (14 September 2009).
- 15 Directive 2003/87/EC, art 25a.1.
- 16 Ellerman and Joskow (2008).
- 17 Cooper (2010).
- 18 COM Q&As on the EU-ETS.
- 19 Cooper (2010).
- 20 Directive 2003/87/EC, art 25.1.
- 21 Ellerman and Joskow (2008).
- 22 Directive 2003/87/EC, art. 25.1.a-b. For an analysis of the legal implications of this linking mechanism see section 5.2 ('The chapeau of Article XX') below.
- 23 Directive 2004/101/EC.
- 24 Directive 2004/101/EC, preamble (8); Directive 2003/87/EC, art 11.a.3.
- 25 Directive 2004/101/EC, preamble (5); Directive 2003/87/EC, art 11.a.1.



- 26 Cooper (2010).
- 27 Parker (2008).
- 28 Ibid.
- 29 Cooper (2010); Directive 2003/87/EC, art 10.a.1.
- 30 Directive 2003/87/EC, art 10.a.12.
- 31 Directive 2003/87/EC, art 10.a.15-16.
- 32 Ibid, art 10.a.17.
- 33 Parker (2008).
- 34 Directive 2003/87/EC, art 10.a.7.
- 35 Ibid, art 10.a.19.
- 36 Parker (2008).
- 37 This is a unilateral commitment that can be found in the Directive 2003/97/EC, art 28.1. This has been communicated by the EU as its quantified economy-wide emissions target for 2020 to the Copenhagen Accord, the document which was agreed upon by the majority, but not all, of the parties to the UNFCCC at the Conference of the Parties in Copenhagen in December 2009.
- 38 Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading system of the Community.
- 39 European Commission (2010).
- 40 Norwegian Ministry of the Environment (2008b).
- 41 More specifically, the discussion is largely based on the Norwegian National Allocation Plan for 2008-2012 (Norwegian Ministry of the Environment (2008a)), the revisions made to this NAP as found in EFTA Surveillance Authority (2009a), and The National Allocation Plan Table for Norway for the 2008-2012 period (as last updated in February 2010).
- 42 Norwegian Ministry of the Environment (2008b).
- 43 EFTA Surveillance Authority (2009b).
- 44 [http://ec.europa.eu/clima/policies/aviation/index\\_en.htm](http://ec.europa.eu/clima/policies/aviation/index_en.htm).
- 45 Ellerman and Joskow (2008).
- 46 Bundesgesetz über die Reduktion der CO<sub>2</sub>-Emissionen (CO<sub>2</sub>-Gesetz) vom 8. Oktober 1999 (Stand am 1. Januar 2010), SR 641.71, as complemented by Verordnung über die CO<sub>2</sub>-Angabe (CO<sub>2</sub>-Verordnung) vom 8. Juni 2007 (Stand am 1. April 2010), SR 641.712.
- 47 Bullock (2009).
- 48 Jiang et al (2009).
- 49 Information derived from a figure in Jiang et al (2009), based on UNFCCC GHG data.

- 50 This section builds on Lennox et al (2010).
- 51 Jiang et al (2009).
- 52 [www.climatechange.govt.nz](http://www.climatechange.govt.nz).
- 53 Lennox et al (2010).
- 54 At state level there are a number of initiatives. These do however fall outside the scope of this paper.
- 55 Officially referred to as the American Clean Energy and Security Act, H.R. 2454.
- 56 Officially referred to as the American Power Act (APA).
- 57 The Waxman-Markey Bill refers to covered entities, a list of which is included in the Bill in Section 700(13).
- 58 Section 722(c).
- 59 The Kerry-Lieberman Bill refers to covered entities, a list of which is included in the Bill in Section 700(12).
- 60 Section 722(c).
- 61 Petroleum-based or coal-based liquid fuel, petroleum coke (only in Waxman-Markey), natural gas liquid, fossil fuel based carbon dioxide, nitrous oxide and fluorinated gas.
- 62 Section 722(b)(11), (WM) and Section 722(b)(12), (KL).
- 63 Sections 767(b) and 768(c), (WM).
- 64 Section 776(b), (KL).
- 65 Section 724(a), (WM) and Section 724(a), (KL).
- 66 Ellerman and Joskow (2008).
- 67 Nordström (2009).
- 68 Grubb and Neuhoff (2006).
- 69 Cooper (2010).
- 70 Grubb (2007).
- 71 Ibid.
- 72 Cooper (2010).
- 73 Betz and Sato (2006).
- 74 Cooper (2010).
- 75 See for example *ibid*.
- 76 The social cost is the total cost associated with an economic activity. It includes both costs borne by the economic agent and by society at large.
- 77 Parker (2008).

- 78 World Bank (2009).
- 79 Parker (2008).
- 80 Cooper (2010).
- 81 Egenhofer et al (2011).
- 82 European Commission <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/08/787>.
- 83 Cooper (2010).
- 84 Egenhofer et al (2011).
- 85 Ibid.
- 86 Sijm et al (2006).
- 87 Ibid.
- 88 Gulli (2008).
- 89 Reinaud (2008), in Gulli (2008).
- 90 Walker (2006).
- 91 Parker (2008).
- 92 Neuhoff et al (2006) in Grubb and Neuhoff (2006).
- 93 Grubb (2006).
- 94 Parker (2008).
- 95 See Nordström (2009) for a more detailed description and analysis of the debate on auctioning vs. free allocation.
- 96 European Commission Directorate General for Environment et al (2005) in Nordström (2009).
- 97 Parker (2008), refers to European Commission Directorate General for Environment (2005).
- 98 Cooper (2010).
- 99 Grubb (2006).
- 100 Wooders et al (2009).
- 101 OECD (2009).
- 102 Smale et al (2006).
- 103 Houser et al (2008).
- 104 Wooders et al (2009).
- 105 Brown and Hogendorn (1994).
- 106 OECD (2005).
- 107 Ibid.

- 108 Åhman et al (2005).
- 109 Stephenson and Upton (2009).
- 110 Wooders et al (2009).
- 111 See for instance Grubb and Neuhoff (2006) and Stephenson and Upton (2009).
- 112 Stephenson and Upton (2009).
- 113 Grubb and Neuhoff (2006).
- 114 Grubb (2007).
- 115 Parker (2008).
- 116 Åhman and Holmgren (2007).
- 117 Parker (2008).
- 118 Åhman et al (2005).
- 119 OECD (2005).
- 120 Stephenson and Upton (2009) 15.
- 121 In this regard, it is interesting to note that there is no preamble in the agreement which is usually where the objectives and rationales of the discipline are expressed.
- 122 See e.g., Panel, *Canada–Aircraft*, para. 9.119; Panel, *Brazil–Aircraft*, para. 10.11; Appellate Body, *US–DRAMS*, para. 115; Appellate Body, *US - AD/CVD*, para. 301.
- 123 The GATT, in its form of the GATT 1947, has been in force since the 1st January 1948, whereas the SCM Agreement has been in force since the 1st January 1995.
- 124 The SCM Agreement regulates subsidies to industrial goods. Subsidies to agricultural goods are mainly governed by the Agreement on Agriculture (AoA), although, particularly after the expiration of the so-called ‘peace clause’ of AoA Article 13, challenges under the SCM Agreement are in principle also possible. By contrast, there are no specific subsidy disciplines for support to the services industry.
- 125 Serious prejudice may arise in case of various forms of displacement and price effects in various markets, or in case of an effect on world market shares.
- 126 These benefits relate particularly to the market access expectations that countries may legitimately derive from the tariff concessions of the subsidizing country that can be frustrated by the subsidy at issue.
- 127 The said precision mainly refers to the fact that there are well-identifiable requirements to be examined and fulfilled. It does not refer to the conceptual or practical clarity of those requirements that are, by contrast, often unclear or complex. On the various issues raised by the definition of a subsidy, see Rubini (2009).
- 128 On the definition of ‘public body’, see Appellate Body, *US - AD/CVD*, paras. 282 et seq.
- 129 On its part, item (iv), which covers those cases where the government (broadly intended as above) provides a financial contribution through a private body, does not seem to be relevant to the scenario of the allocation of allowances free of charge, since the allocation will normally be carried out by a government or public body.

- 130 As a testament to this difficulty, it has been suggested that the panels and the Appellate Body in the *US - FSC* case come out with four different tests to approach the 'otherwise' language. Rubini (2009) 263-274.
- 131 Bhagwati and Mavroidis (2007) 302-303.
- 132 For this reason, to assess the omission of the government against what other governments do, does not seem appropriate.
- 133 This approach is followed in EU State aid law. See Opinion of Advocate General Jacobs in Case C-126/01 *GEMO*, paras. 66-71. On the PPP generally, see Schwartz (2010).
- 134 The fact that, in the context of an ETS, the emissions are permitted within a given cap does not alter this conclusion. In other words, the allowance or permit does not represent a full justification for pollution but simply a technical means used to internalize the cost of the emissions and to reduce them. If a company is not efficient enough and pollutes more than allocated it will have to buy extra allowances and, through this, pay for the additional pollution.
- 135 The example provided is 'fiscal incentives such as tax credits'. Dealing with border tax adjustments, the relevant footnote further refers to exemption or remission of 'duties or taxes' for exports.
- 136 See Appellate Body, *EC - Bananas*, para. 221.
- 137 Howse (2010) 12-13.
- 138 Appellate Body, *US - Softwood Lumber IV*, paras. 57-76. While the calculation of the benefit analysis (see paras. 82-122) is controversial because *contra legem*, this is not the case for the financial contribution analysis outlined in the text.
- 139 The conclusion that allowances are financial instruments may open up for the applicability of the GATS.
- 140 GATT Article XVI.1.
- 141 Staiger and Sykes (2010) footnote 52 at 610.
- 142 Bidgeli (2009) 170; Howse (2010) footnote 19 at 14; Rubini (2009) 123-125. A system of feed-in-tariffs (FITs), and more precisely its local content requirement, has recently been challenged at the WTO (*Canada - Certain Measures Affecting the Renewable Energy Sector*, DS 412). The complainant, Japan, alternatively claims that this system amounts to a financial contribution or a form of price support.
- 143 The impact on trade has to be assessed separately, under the relevant rules on prohibited, actionable and countervailable subsidies.
- 144 Appellate Body, *Canada- Aircraft*, para. 157.
- 145 Rubini (2009) 263.
- 146 This is not an absolute benchmark, however. The Appellate Body itself (*Canada - Aircraft*, para. 157) underlined that the marketplace is just "an appropriate basis for comparison" (emphasis added), thus opening the door to the use of other yardsticks. This early qualification of the Appellate Body becomes even more interesting in the current times of crisis where the market and its laws have been under considerable strain. The implications



for the application of subsidy laws cannot be predicted. For a more definite reference to the market as the relevant standard, see Appellate Body, Japan - DRAMs, para. 172; EC - Aircraft, paras. 974-976.

- 147 See section 4.3.
- 148 The final legal determination of the existence of an objectionable subsidy depends on the presence of various elements, of which the economic benefit is only one.
- 149 The scenario is different if there is a clear point in time which signals the passage from a free-of-charge scenario to a full-auctioning scenario. Old and new production units would thus belong to different regime periods of the ETS with different prevailing benchmarks.
- 150 We have provided an example with respect to the EU ETS in section 2.1.
- 151 See sections 2.1 and 4.3.
- 152 See Sykes (2010).
- 153 These arguments may be familiar to European lawyers dealing with State aid cases.
- 154 As seen, other objectives include the prevention of carbon leakage and the smooth introduction of the system.
- 155 Sykes (2003) 3.
- 156 This was indeed the economic and policy puzzle underlying the tax litigation between the EU and the US, first in the GATT era (*US - DISC* dispute) and afterwards in the WTO (*US - FSC*). In economic terms, the US legislation aimed at putting American companies at a level playing field with European ones by guaranteeing economic equivalence between the two tax systems. As the litigation shows, however, the legal and political assessment may be different from the economic one. See Hudec (2003).
- 157 See Rubini (2009) 252-255.
- 158 *Canada - Aircraft*, para. 157 (emphasis added).
- 159 This is indicative though ('potential'), since a more comprehensive analysis of the impact of the measure is carried out only when the negative impact of the subsidy in the form of adverse effects or injury is actually assessed. For example, the existence of an out-of-the-market practice may indicate the existence of an advantage and even of an increase in the financial wealth of a company. This, however, does not necessarily and invariably affect the production decisions of that company, which are the only ones that can impact the competitive process and distort trade and competition.
- 160 The importance of the distinction between scope and justification in subsidy law and policy has been recently expressed by underlining the need for a three-step analysis 'define, measure, evaluate'. See International Institute for Sustainable Development (2010).
- 161 It is usually for the complainant to put forward evidence of the breach, whereas, once a breach has been established, the possible justifications are the defendant's responsibility.
- 162 The need to keep scope and justification separate does not mean that the public policy objectives of the measure are not relevant at all at the level of defining a measure as a subsidy. We have noted how it can be difficult to consider public policy (be they trade or non-trade related) elements in the subsidy determination, particularly when the scenario is

comparable to a market one. With that said, it is clear that when assessing non-market scenarios, certain public policy objectives should be considered in the analysis. Thus, when assessing whether a tax is 'otherwise due', it is inevitable to analyze the objectives of the tax (for example the control of carbon emissions through a carbon tax) and whether the justification of the differential treatment (for example of different pollution levels) is in line with these objectives. See Rubini (2009) chapter 9.

- 163 While WTO subsidy control is already triggered if the measure is found to be a specific subsidy, it is clear that, if a distorting impact is also established, the discipline will bite more and the symbolic effect of its application will be more apparent.
- 164 See Rubini (2009) chapter 13.
- 165 A comprehensive exposition of the specificity test can be found in Appellate Body, *US - AD/CVD*, paras. 363 et seq.
- 166 Appellate Body, *US - AD/CVD*, para. 371.
- 167 Panel, *US - Cotton*, para. 7.1142.
- 168 Ibid. On the interpretation of 'sufficiently broadly available' (as different from 'universally available') and interpreting selective as 'sufficiently limited', see Panel, *US - Aircraft*, paras. 7.762 and 7.1237. See also the rather open-ended approach to specificity of Panel, *US - Softwood Lumber IV*, paras. 7.115-7.122.
- 169 Footnote 2 of the SCM Agreement.
- 170 Article 2.1(c) of the SCM Agreement.
- 171 This would require the endorsement of a fully-fledged competition (not trade) approach. See Rubini (2009) chapter 14.
- 172 See, for example, Panel, *EC - Aircraft*; Panel, *US - Aircraft*; Appellate Body, *US - Cotton* and *US - Cotton (Article 21.5)*. On the various adverse effects tests see Rubini (2009) chapter 14.
- 173 This follows the definition of trade-intensity adopted in Article 10a(16) of EC Directive 2003/87/EC: "A sector or subsector is also deemed to be exposed to a significant risk of carbon leakage if ... (b) the intensity of trade with third countries, defined as the ratio between the total value of exports to third countries plus the value of imports from third countries and the total market size from the Community (annual turnover plus total imports from third countries), is above 30%".
- 174 It is worth recalling that an array of objectives are put forward in justification of the practice of free allocation of allowances: defensive goals (competitiveness and carbon leakage concerns), proactive objectives (support of efforts to reduce GHG) and political purposes (increase of the acceptability of the costs of the said efforts).
- 175 Van den Bossche (2008) 616.
- 176 Ibid, 618.
- 177 Appellate Body, *US - Gasoline*, p. 16-17.
- 178 Eeckhout (2010).
- 179 This process does not necessarily require a precise cost-benefit analysis, but what is, in substance, a proportionality assessment. An informative taxonomy of 'trade-off' adjudicative 'devices' can be found in Trachtmann (2008) 222-223.

- 180 It is however useful to note the statement of the Appellate Body at para. 222: “we see the ‘right to regulate’, in the abstract, as an *inherent power* enjoyed by a Member’s government, rather than a right bestowed by international treaties such as the WTO Agreement” (emphasis added). Clearly, this incidental statement reaches beyond the language of the Protocol. It remains to be seen however whether this ‘abstract right to regulate’ can constitute the normative foundation for the applicability of GATT Article XX to other WTO Agreements, or, more simply but no less importantly, the stated intellectual inclination of the Appellate Body to consider attentively any such claim in the future. See Pauwelyn (2010).
- 181 But only Article XX(b). It may well be that a defence could be raised under another Article XX exception, such as the one on public morals (paragraph (a)). See Pauwelyn (2010) 137, drawing this argument from Panel, EC - Biotech.
- 182 The language of the chapeau of Article XX whereby “*nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures*” (emphasis added) does not represent an obstacle to a beyond-GATT application, quite the contrary. The historical meaning of this expression dates back to the willingness to guarantee a ‘universal’ application of the ‘general’ exceptions to breaches of any GATT provision. See Jackson (1969) 743-744; Irwin et al (2009) 164.
- 183 Howse (2010) 17.
- 184 See Appellate Body, *US - AD/CVD*, para. 301 which refers to and confirms previous case law in point.
- 185 See Appellate Body, *Brazil - Desiccated Coconut*, paras. 11-14, on the different normative framework between GATT and WTO and on the relationship between GATT and SCM provisions on subsidies.
- 186 Others, however, have argued the opposite in the special context of the SCM Agreement, mainly because the SCM Agreement makes an explicit reference to the WTO Agreement on Agriculture to define their respective applicability and because other WTO agreements such as the Agreement on Sanitary and Phytosanitary Measures (SPS Agreement) make an express reference to Article XX of the GATT to indicate their relationship with the latter.
- 187 According to Article 31 of the SCM Agreement, Articles 8 and 9 were in force only for five years and, absent any determination of the Committee on Subsidies to extend their application, in the original or modified form, they would lapse. On the history and prospects of non-actionability see the detailed analysis Bigdeli (2011).
- 188 And hence no possibility of conflict as provided by the Interpretative Note to Annex 1A of the WTO Agreement.
- 189 Drawing a parallel, we do not, therefore, see the same kind of elaboration-relationship found by the *US - Poultry* Panel for the SPS Agreement-Article XX(b) of the GATT.
- 190 On 13 September 2010, Japan, immediately joined by the US and EU, took Canada to dispute settlement (DS 412) complaining about the alleged illegal subsidization of Ontario’s green energy plan, which is seemingly key to Canada’s renewable energy policy. What is at issue is the local content requirement of a feed-in tariff. In the same week, a 6,000-page complaint was filed with the US Trade Representative petitioning that action be taken under section 301 against Chinese subsidies in the clean energy sector. This had led to the dispute *China - Wind Power Equipment* (DS419), filed by the US in December 2010, where, again, what is at issue is mainly an import-substitution requirement.

- 191 Appellate Body, *US - Gasoline*, p. 20.
- 192 Emphasis added. Pauwelyn (2007) defined the chapeau as “the most important provision in the entire GATT agreement”. (37) Although he was discussing the WTO legality of various policy measures to tackle US competitiveness concerns, this statement can be generalized and supports our analysis of the importance of GATT Article XX in the WTO system.
- 193 Appellate Body, *US - Gasoline*, p. 20.
- 194 Appellate Body, *US - Shrimp*, para. 156.
- 195 See Panel, *Brazil - Retreaded Tyres*, para. 7.46 where it is noted that a party invoking an environmental justification under Article XX(b) of the GATT “has to establish the existence not just of risks to ‘the environment’ generally, but specifically of risks to animal or plant life or health”.
- 196 See Appellate Body, *Brazil - Tyres*, para. 178 for a good expression of the ‘necessity’ test, and Appellate Body, *US - Shrimp*, para. 141 for the ‘relating to’ language.
- 197 *US - Gasoline; US - Shrimp; EC - Asbestos; Korea - Beef; Brazil - Tyres*.
- 198 *US - Shrimp*.
- 199 It should be noted that measures addressing carbon leakage cannot be held to be extra-territorial and thus raise issues of availability of the Article XX defence. It is in the nature of GHG emissions that although produced locally their effects are felt everywhere.
- 200 Appellate Body, *Brazil - Tyres*, para. 151.
- 201 Ibid.
- 202 A key point of the necessity test analysis is also the determination whether there are less trade-restrictive alternatives available to achieve the same aim, but, importantly, these should be *reasonably* available, a qualification that adds to the deference to the country adopting the measure.
- 203 Appellate Body, *US - Gasoline*, p. 18.
- 204 Appellate Body, *Brazil - Tyres*, para. 225.
- 205 According to the Appellate Body in *US - Gasoline*, equalizing these two tests would “be both to empty the chapeau of its contents and to deprive the exceptions in paragraphs (a) to (i) of meaning. Such recourse would also confuse the question of whether inconsistency with a substantive rule existed, with the further and separate question arising under the chapeau of Article XX as to whether that inconsistency was nevertheless justified. One of the corollaries of the ‘general rule of interpretation’ in the *Vienna Convention* is that interpretation must give meaning and effect to all the terms of a treaty. An interpreter is not free to adopt a reading that would result in reducing whole clauses or paragraphs of a treaty to redundancy or inutility” (p. 21).
- 206 Appellate Body, *US - Gasoline*, p. 22-23.
- 207 Appellate Body, *US - Shrimp*, para. 165.
- 208 Appellate Body, *US - Shrimp* 21.5, para. 144.
- 209 See for example Appellate Body, *US - Shrimp*, paras. 180-181.

- 210 Panel, *EC - Tariff Preferences*, paras. 7.228-7.229.
- 211 See Appellate Body, *US - Gasoline*, p. 29 and Appellate Body, *US - Shrimp* 21.5, paras. 132-134.
- 212 It has been noted that this introduces in the chapeau of GATT Article XX “an ‘embryonic’ and ‘soft’ requirement on Members to recognize the equivalence of foreign measures comparable in effectiveness”. See Van den Bossche (2008) 645; Marceau and Trachtmann (2006) 42.
- 213 Article 25 of EC Directive 2003/87/EC.
- 214 Howse (2009) 58.
- 215 Bhagwati and Mavroidis (2007) 306-307. The authors note that “this case opens the door a little wider for those seeking to restrict or reduce preferentially the market access of products from member nations that do not satisfy a unilaterally specified PPM requirement”.
- 216 This seems indeed the rationale of the newly introduced Article 25.1a in the Directive 2003/87/EC, which allows for agreements on the recognition of allowances of “compatible mandatory greenhouse gas emissions trading systems with absolute emissions caps established in any other country or in sub-federal or regional entities”. What remains to be seen is whether this amendment eliminates possible claims of bias. One factor that could lead to controversy is the limitation of the linking to ETSs with absolute caps only.
- 217 Hufbauer et al (2009) 95-97.
- 218 Ibid, 98.
- 219 Aerni et al (2010); Cottier et al (2010).



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