

ICLE Comments Regarding European Commission Guidelines on certain State aid measures in the context of the system for greenhouse gas emission allowance trading post 2021

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Executive Summary

Emission trading programs have the potential dramatically to reduce the costs of abating pollution. When such programs are well designed, they can reduce abatement costs by as much as 50%.

Most emission trading programs address local ambient air pollution. As such, problems associated with the harmful redistribution of pollution from one place to another are relatively easy to address through the application of simple rules, such as an absolute cap on emissions in a certain location. Some greenhouse gases (GHGs), such as carbon dioxide (CO₂), are not local pollutants and so do not justify such local restrictions. However, there is at present no global system in place that would cap GHG emissions. As a result, jurisdictions that impose local caps on GHG emissions may experience a shift in economic activity, as large emitters of GHGs choose to relocate their activities to jurisdictions with less onerous restrictions on GHG emissions. This is called “carbon leakage”.

While carbon leakage may potentially lead to increased CO₂ emissions, excessive measures to prevent its occurrence may be worse than the disease they are intended to cure.

State aid rules are designed to promote competition within the EU. Historically, the EU has granted exemptions to state aid rules for certain measures that are intended to mitigate the potential for carbon leakage. Unfortunately, previous exemptions have contributed to a weakening of the functioning of the EU Emission Trading System (ETS) and likely contributed to its near-collapse on at least two occasions.

The current exemptions terminate at the end of December 2020. This comment evaluates the proposal to establish new exemptions to state aid rules after the current exemptions terminate. We find that, in their current form, the proposed new guidelines would permit Member States to grant state aid (in the form of free ETS allowances) that would ultimately be deleterious to its stated goals of reducing European CO₂ emissions. Furthermore, the draft guidelines leave too much room for protectionist subsidies and the distortion of competition between electricity producers.

Introduction

The European Union has adopted ambitious plans to curb emissions of carbon dioxide and other greenhouse gases (GHGs). At the heart of these plans lies the EU Emissions Trading System (ETS), enshrined in Directive 2003/78¹ as amended by Directive 2009/29², Decision 2015/1814³ and Directive 2018/410⁴, which covers emissions from large emitters, including power plants, industrial plants, and airlines – which total just under half of GHG emissions in the EU.

To facilitate the implementation of the ETS, Directive 2003/78 provides a limited set of circumstances where Member States can grant State Aid, in the form of free ETS allocation, to firms. The overarching theme is simple: ETS schemes impose costs on carbon emitters. These increased costs may have various consequences which Member States, rightly or wrongly, want to avoid. For instance, high carbon costs may cause some firms to offshore production, and others to go out of business.

But enabling states to award free ETS allocations to selected firms (and thus shielding these subsidies from the application of EU State Aid rules) is not without problems. As we argue below, free ETS allowances could be used to protectionist ends by Member States. They might also increase CO₂ emissions across the board. Finally, the excessive allocation of free allowances may threaten the overall viability of ETS schemes. As a result, rules that exclude free ETS allowances from the application of EU state aid rules should be designed with appropriate caution.

Against this backdrop we argue that the draft guidelines recently published by the European Commission provide insufficient safeguards against protectionism, competitive distortions, as well as the over-allocation of free ETS allowances. We thus

¹ Directive 2003/87/EC, O. J. L. 275, 32 (establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC) [hereinafter ETS Directive].

² Directive 2009/29/EC, O.J. L. 140, 63 (amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community).

³ Decision (EU) 2015/1814, O.J. L., 264, 1 (concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading scheme and amending Directive 2003/87/EC).

⁴ Directive (EU) 2018/410, OJ L 76, 3 (amending Directive 2003/87/EC to enhance cost-effective emission reductions and low-carbon investments, and Decision (EU) 2015/1814).

urge the Commission to modify these guidelines so as to prevent the above from occurring.

Our comment proceeds as follows:

Part I outlines the benefits of emission trading programs and the challenges in designing such programs, especially in the context of GHG emissions. We describe the economic foundations of these mechanisms and show how they might contribute to the reduction of GHG emissions, potentially reducing global warming. Finally, we introduce the concept of “carbon leakage” and discuss ways in which it might be addressed.

Part II assesses the likely impact of the European Commission’s draft guidelines “*on certain State aid measures in the context of the system for greenhouse gas emission allowance trading post 2021*”.⁵ We raise concerns, in particular, regarding the potential for these exemptions from state aid rules to have undesirable unintended consequences.

Part III puts forward a series of potential measures that would reduce the likelihood and extent of these unintended consequences.

I. Emission trading, the Kyoto Protocol and Carbon Leakage

To better understand the policy implications of the EU’s draft guidelines – and see where they are less than optimal – it is important to understand why numerous policymakers have decided to adopt Emission Trading Schemes; how these could potentially help reduce GHG emissions; and why the previous iterations of the EU ETS broadly failed to meet their goals (due to measures that are similar to those outlined in the Commission’s draft guidelines).

A. Emission Trading

The ETS is a system of tradable emission permits. The theoretical foundations for such systems can be traced back in a general sense to Coase’s essay, *The Problem of*

⁵ Commission Communication Guidelines on Certain State Aid Measures in the Context of the System for Greenhouse Gas Emission Allowance Trading Post 2021 (draft) [hereinafter Draft guidelines on certain State aid measures].

Social Cost and, more specifically, to J. H. Dales' *Pollution, Property and Prices*.⁶ The basic insight is that the cost of reducing emissions varies from one plant to another, so allowing emission trading enables plants with high abatement costs to buy permits from plants with low abatement costs, leading to a reduction in the total cost of abatement relative to the alternative of imposing rigid caps on all plants.

From the late 1970s onwards, numerous emission trading programs were established in the U.S. A 2003 assessment of those programs found that when well-designed, they reduced the cost of emission abatement by up to 50%.⁷ These savings came from a combination of high abatement cost plants purchasing permits from low abatement cost plants, as well as from "banking" (i.e. individual plants reserving some permits for use in later periods).

For emission trading to be effective, several conditions must be met: First, it must be possible to specify clearly the acceptable ambient concentration of a particular pollutant. Second, the main sources of that pollutant must be readily identifiable. Third, the transaction costs associated with the system (i.e. costs of monitoring, enforcing, trading and banking) must not be overly burdensome.

One complication for many emission trading programs is the potential for harmful redistribution of pollution from one place to another. Most U.S. emission trading programs sought to address local ambient air pollution. As such, this problem could be addressed through the application of simple rules, such as an absolute cap on emissions in a certain locations, or a formula for lowering the quantity of emissions in locations where they would do more harm to the environment and/human health (this was done by underweighting emissions in such locations and thereby effectively raising the price of such emissions).⁸ In practice, some emission trading schemes failed adequately to account for such effects. Most notably, the sulfur dioxide trading program, established under the 1990 amendments to the Clean Air Act, had the effect of redistributing sulfur dioxide emissions from west of the Mississippi river to

⁶ Ronald Harry Coase, *The Problem of Social Cost*, 3 *JL & ECON.*, 1 (1960). See also, JOHN HARKNESS DALES, *POLLUTION, PROPERTY & PRICES: AN ESSAY IN POLICY-MAKING AND ECONOMICS* (Edward Elgar Publishing, 2002).

⁷ A Denny Ellerman, Paul L Joskow & David Harrison Jr, *Emissions trading in the US*, *PEW CENT. GLOB. CLIM. CHANG.*, 1 (2003).

⁸ Tom Tietenberg, *Tradeable Permits for Pollution Control when Emission Location Matters: What have We Learned?*, 5 *ENVIRONMENTAL AND RESOURCE ECONOMICS*, 95 (1995).

east of the river, where population density is greater. One recent analysis found that this redistribution imposed costs to human health that are arguably similar to the financial cost savings.⁹

B. Global Warming and The Kyoto Protocol

A key feature of the successful emission trading programs in the US is that they dealt with ambient air pollution that caused harm mostly locally and mostly over the (relatively) short term (days, months and years). As a result, it was relatively easy to determine acceptable emissions caps. By contrast, to the extent that GHGs cause harm, they do so globally and over the very long term (decades). As a result, for an emission cap and trade program to work for GHGs, it really has to be global and should also allow for very long-term banking.

The ETS was initially established with the aim of enabling the EU to meet its obligations under the 1997 Kyoto Protocol, which set emission caps for richer “Annex I” countries to be met between 2008 and 2012.¹⁰ While ostensibly “global” the Kyoto Protocol required ratification by only 55 countries as long as they included Annex I countries that “accounted in total for at least 55 per cent” of CO₂ emissions of Annex I countries in 1990. In practice, the minimum criteria for inclusion of Annex I countries were *just* met, which meant that the Protocol actually imposed restrictions on less than 50% of total global emissions during the relevant period (1990-2012).¹¹

The Kyoto Protocol had its own versions of emission trading: Under “Joint Implementation” (JI), Annex I countries could trade emission credits with one another, while and under the “Clean Development Mechanism” (CDM), Annex I countries could purchase emission reduction credits from developing countries.¹²

⁹ H. Ron Chan, B. Andrew Chupp, Maureen L. Cropper, Nicholas Z. Muller, *The Impact of Trading on the Costs and Benefits of the Acid Rain Program*, NBER WORKING PAPER NO. 21383 (2017).

¹⁰ Kyoto Protocol to the United Nations Framework Convention on Climate Change, 2303 U.N.T.S. 162 (Dec. 10, 1997).

¹¹ José Goldemberg & Patricia Maria Guardabassi, *Climate Change and “historical responsibilities”*, 15 AMBIENTE & SOCIEDADE, 201 (2012).

¹² UNITED NATIONS CLIMATE CHANGE, “Joint implementation”, <https://unfccc.int/process/the-kyoto-protocol/mechanisms/joint-implementation>.

Both JI and CDM were plagued by monitoring and enforcement issues. A 2008 study by researchers at Stanford concluded that it was simply not possible to know whether, in the majority of cases, CDM credits were being issued for projects that would have occurred anyway – and thus did not represent net emission reductions.¹³ And one recent study estimated that only about 25% of JI projects represented net emission reductions.¹⁴

Furthermore, the Kyoto Protocol was ultimately a short-term measure intended to address a long-term problem. And according to at least one study, even if the Protocol's restrictions had been maintained until 2100, it would have done practically nothing to reduce global warming.¹⁵ As a result, it spectacularly failed the benefit-cost test.¹⁶

C. The ETS, Carbon Leakage, and the Allocation of Free Permits

Under the Kyoto Protocol, the EU was considered a single political unit and was subject to a Union-wide cap. The EU then set national limits for each member state and established the Emission Trading System (ETS) as a means for implementing those limits on large emitters (primarily power plants and industrial facilities) and facilitating a means of enabling abatement cost-efficiencies to be realized. Under the ETS, emission permits are allocated on an annual basis (but unused permits can be reserved for future use – enabling banking).¹⁷

Early on, the ETS suffered from numerous problems, ranging from an overallocation of permits to major corruption and fraud issues that were endemic to the system's

¹³ Michael Wara & David G Victor, *A realistic policy on international carbon offsets*, 74 PROGRAM ON ENERGY AND SUSTAINABLE DEVELOPMENT WORKING PAPER 1 (2008).

¹⁴ Anja Kollmuss, Lambert Schneider & Vladyslav Zhezherin, *Has Joint Implementation reduced GHG emissions?: Lessons learned for the design of carbon market mechanisms*, STOCKHOLM ENVIRONMENTAL INSTITUTE WORKING PAPER 2015-07, 1 (2015).

¹⁵ B. LOMBORG, M.H. MATTHEWS & UNIVERSITY OF CAMBRIDGE, *THE SKEPTICAL ENVIRONMENTALIST: MEASURING THE REAL STATE OF THE WORLD*, 302 (Cambridge University Press. 2001).

¹⁶ William D Nordhaus & Joseph G Boyer, *Requiem for Kyoto: An economic analysis of the Kyoto Protocol*, 20 THE ENERGY JOURNAL, 93 (1999). (“The net global cost of the Kyoto Protocol is \$716 billion in net present value”).

¹⁷ A Denny Ellerman, Vanessa Valero & Aleksandar Zaklan, *An analysis of allowance banking in the EU ETS*, 29 ROBERT SCHUMAN CENTRE FOR ADVANCED STUDIES RESEARCH PAPER NO. RSCAS, 1 (2015).

original design.¹⁸ These problems led to a collapse of the system in June 2007.¹⁹ After a brief suspension, the ETS was restarted with tighter controls and prices rose dramatically, reaching a high of 28 Euros per ton in mid-2008. As a result, industrial producers in the EU faced higher costs than their competitors in other markets.

In January 2008, the EU announced that the ETS would stay in place after the expiry of the Kyoto Protocol and that the number of permits would gradually fall in order to meet the EU's self-imposed objective of reducing emissions to 20% below 1990 levels by 2020. In response, numerous industrial emitters threatened to move production outside the EU.²⁰

This put the EU in a quandary: if industrial emitters moved production outside the EU, they would not be bound by the EU's ETS and global emissions could actually rise. This was called "carbon leakage." In response, France's then-President Nicolas Sarkozy proposed the introduction of carbon border tariffs, but this was rejected by the EU.²¹ Instead, at a summit in December 2008, the EU announced that "Installations in sectors or sub-sectors which are exposed to a significant risk of carbon leakage will be allocated 100 % of allowances free of charge at the level of the benchmark of the best technology available."²²

In other words, sectors deemed to be at "significant risk of carbon leakage" would be given enough free emission permits to cover all their emissions assuming they use

¹⁸ Sam Morgan, "Emissions Trading System failures sour energy policy efforts", *EURACTIV*, Sep. 20, 2017, <https://www.euractiv.com/section/emissions-trading-scheme/news/emissions-trading-system-failures-sour-energy-policy-efforts/>. See also, Aude Mazoue, "Multi-billion euro carbon-trading fraud trial opens in Paris", *FRANCE 24* (May 4, 2016), <https://www.france24.com/en/20160503-france-trial-multi-billion-carbon-emissions-trading-fraud-opens-paris>.

¹⁹ Matthew Sinclair, *The Expensive Failure of the European Union Emissions Trading Scheme*, TAXPAYERS' ALLIANCE, 1 (2009).

²⁰ "EU industry and the 'carbon leakage' threat", *EURACTIV* (Jan. 27, 2009), <https://www.euractiv.com/section/trade-society/linksdossier/eu-industry-and-the-carbon-leakage-threat/>.

²¹ "Sarkozy renews pressure for CO2 border tax", *EURACTIV* (Sep. 14, 2009), <https://www.euractiv.com/section/climate-environment/news/sarkozy-renews-pressure-for-co2-border-tax/>.

²² Council of the European Union, "Elements of the final compromise regarding the energy and climate change package, as agreed by the European Council on 11 and 12 December 2008" (Dec. 12, 2008) <https://register.consilium.europa.eu/doc/srv?l=EN&f=ST%2017215%202008%20INIT>.

“best available technology”. Meanwhile, an industry was deemed to be at “significant risk of carbon leakage” if:

(a) the extent to which the sum of direct and indirect additional costs induced by the implementation of this directive would lead to a substantial increase of production cost, calculated as a proportion of the Gross Value Added, of at least 5 %; and

(b) the non-EU Trade intensity defined as the ratio between total of value of exports to non EU + value of imports from non-EU and the total market size for the Community (annual turnover plus total imports) is above 10 %.

Notwithstanding the provisions of the first subparagraph, a sector or sub-sector is also deemed to be exposed to a significant risk of carbon leakage:

- if the sum of direct and indirect additional costs induced by the implementation of this directive would lead to a particularly high increase of production cost, calculated as a proportion of the Gross Value Added, of at least 30 %; or

- if the non-EU Trade intensity defined as the ratio between total of value of exports to non EU + value of imports from non-EU and the total market size for the Community (annual turnover plus total imports) is above 30 %.²³

In 2013, the ETS once again collapsed, with prices falling to a low of below 3 Euros. The cause was, again, overallocation of permits.²⁴

In 2015, as part of its voluntary “Nationally Determined Contribution” to the Paris Agreement, the EU committed to reduce carbon emissions to 40% below 1990 levels by 2030. In an effort to meet that target, in 2018, the EU developed new rules for the ETS that would apply for the period 2021 to 2030. Under these rules, the emission cap is to be reduced by 2.2% per year. Unsurprisingly, the spectre of carbon

²³ Council of the European Union, “Final compromise regarding the energy and climate change package, as agreed by the European Council at its meeting on 11 and 12 December 2008” (Dec. 12, 2008), <https://register.consilium.europa.eu/doc/srv?l=EN&f=ST%2017215%202008%20INIT>.

²⁴ Damian Carrington, “EU carbon price crashes to record low”, THE GUARDIAN (Jan. 24, 2013), <https://www.theguardian.com/environment/2013/jan/24/eu-carbon-price-crash-record-low>.

Leakage once again reared its head and the EU committed to continue permitting, “sectors at highest risk of relocating their production outside the EU” to receive “full free allocation”. It notes that “The free allocation rate for sectors less exposed to carbon leakage will amount to 30%.”²⁵

In addition, the EU asserted that “Member states can continue to provide compensation for indirect carbon costs in line with state aid rules.”

The current Guidelines are set to expire on 31 December 2020 and the EU recently published new draft Guidelines, which are currently open for public consultation.²⁶

II. Draft EU guidelines

Against this backdrop, the goal of the draft guidelines published by the Commission is twofold: first, to update the set of circumstances under which states can grant aids that reduce “carbon leakage”²⁷; and, second, to make it easier for low-income Member States to grant ETS allowances that incentivize investments in the generation of “sustainable” electricity.²⁸ But both of these objectives come with significant risks of regulatory failure.

A. Lower incentives to reduce emissions

Perhaps most importantly, the measures contained in the Commission’s draft guidelines might unwittingly decrease firms’ incentives to reduce their emissions. This is particularly troublesome, given that the few industries targeted by the draft guidelines are responsible for a very large share of the EU economy’s total emissions.

Indeed, in their current form, the guidelines would affect both part of the manufacturing sector and the electricity production sector. Although precise numbers are

²⁵ Council of the European Union Press Release, “EU Emissions Trading System reform: Council approves new rules for the period 2021 to 2030” (Feb. 27, 2018) <https://www.consilium.europa.eu/en/press/press-releases/2018/02/27/eu-emissions-trading-system-reform-council-approves-new-rules-for-the-period-2021-to-2030/pdf>.

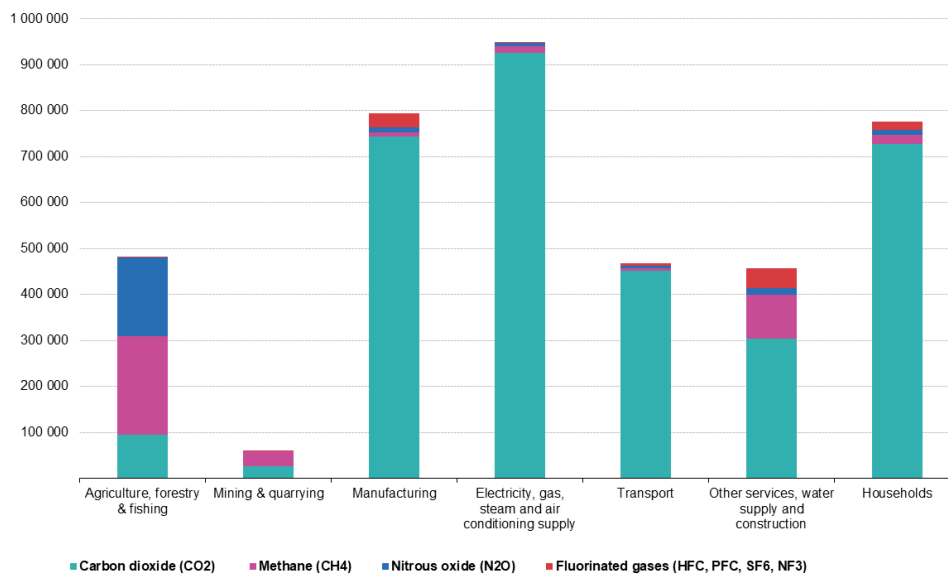
²⁶ Draft guidelines on certain State aid measures, *supra* note 5.

²⁷ *Id.* §11. See also, ETS Directive, *supra* note 1, art. 10a (6).

²⁸ Draft guidelines on certain State aid measures, *id.* §12. See also, ETS Directive, *id.* art. 10c.

hard to come by, taken together, these two sectors might account for as much as 50% of European CO₂ emissions, as can be seen in the figure below.²⁹

Greenhouse gas emissions by economic activity and by pollutant, EU-27, 2018
(thousand tonnes of CO₂ equivalents)



Source: Eurostat (online data code: env_ac_ainah_r2)

eurostat

For a start, the **measures seeking to prevent carbon leakage** would affect eight sectors that are all part of the manufacturing industry. They include the manufacturing of aluminum, steel, iron, paper, refined petroleum products, and some basic chemicals.³⁰

Although the exact quantity of CO₂ emitted by these sectors is uncertain, it is clear that they are on the emission-heavy side of the scale (this also explains why the cost of CO₂ emission certificates may be a more salient issue for these firms).

²⁹ EUROSTAT, “Greenhouse gas emissions by economic activity and by pollutant” (2018), https://ec.europa.eu/eurostat/statistics-explained/images/7/74/Figure_2_Greenhouse_gas_emissions_by_economic_activity_and_by_pollutant%2C_EU-27%2C_2018.png.

³⁰ Draft guidelines on certain State aid measures, *supra* note 5, at Annex I.

Attempts to reduce CO₂ emissions by preventing carbon leakage thus raise an evident paradox: the firms that are most likely to offshore production, because of the cost of CO₂, are also likely to be the heaviest emitters of CO₂.

Though there is some appeal to keeping these firms in the EU and making them pay for only part of their CO₂ emissions³¹ – as opposed to even less if they moved abroad – there are significant risks. Firms in privileged sectors that receive free allocations face lower costs than firms in other sectors; in other words, they receive an effective subsidy from those sectors that must pay the full freight costs of permits. The idea that subsidizing CO₂ emissions in some sectors may reduce overall emissions is premised on the assumption that firms would otherwise move towards countries with lower emissions standards. This reasoning raises three empirical questions. First, would firms move abroad absent the projected state aid measures (as opposed to adopting an abatement strategy)? Second, would they necessarily move to countries with less stringent emissions standards (firms could, for instance, move to countries with less stringent CO₂ emissions standards but with other cost or tax-related advantages that make offshoring viable)? Third, and perhaps most importantly, even if the firms moved operations to countries with less stringent CO₂ emissions standards, would they actually emit more CO₂? Firms might use the same processes in their offshored operations, either because they seek to comply with global best environmental practices or simply because those processes are the most efficient. Indeed, if firms relocate, they might deploy lower emission technologies, especially if they are building new plants or if they are able to access less costly low-carbon sources of energy such as natural gas. The answers to these questions cannot be known a priori and are inherently case-specific.

Unfortunately, in their current form, the Commission's draft guidelines provide very few guarantees that state aid would only be deemed compatible with the internal market – and thus granted by States – in those instances where there is clear evidence of *actual* carbon leakage. Indeed, according to the draft guidelines:

³¹ Under the proposed guidelines, the amount of aid that can be granted by Member States would be limited to 75% of the indirect emissions costs that firms incur (in most cases, at least). *Id.* §26 & 30.

For the purpose of these Guidelines, a genuine risk of carbon leakage is considered to exist only if the beneficiary is active in a sector listed in Annex I.³²

But, as noted, merely being active in a sector listed in Annex I tells us nothing about the likelihood of carbon leakage. The draft guidelines thus offer little to no guarantee that state aid will actually prevent leakage, and thus reduce rather than increase CO₂ emissions.

The measures that enable member states to *subsidize* investments in **the modernization of electricity generation** are equally prone to unintended outcomes. Here too, the paradox is clear.

By their very nature, ETS schemes should ensure that electricity generation moves towards lower-emitting options (due to the higher cost of CO₂ emissions). Conversely, as has been argued above, a well-designed ETS scheme would also ensure that firms *do not* change their conduct when potential CO₂ reductions are too small to justify the cost of abatement (this avoids the creation of “white elephants”, i.e. schemes that fail the cost/benefit analysis³³). Granting additional subsidies for the modernization of electricity generation, as provided for by the EU’s draft guidelines, could tamper with these incentives.

For a start, all government subsidies inherently raise the risk of white elephants. And yet, the Commission’s draft guidelines do not impose any requirement that subsidized projects yield positive benefit/cost ratios. It would thus fall upon Member States to ensure that this is not the case. There is no guarantee that Member States will undertake this type of analysis.

Similarly, the subsidization of electricity modernization initiatives in one Member State may also reduce the incentives to invest in lower CO₂ generation capacity in others. Indeed, upgrading existing electricity generation infrastructure in one Member State will ultimately *increase* emissions if, in the counterfactual setting, electricity

³² *Id.* §20.

³³ See, e.g., James A Robinson & Ragnar Torvik, *White elephants*, 89 J. PUBLIC ECON., 197 (2005). (“We therefore need to explain not simply underinvestment, but also the missallocation of investment. The canonical example of this is the construction of white elephants—investment projects with negative social surplus.”).

suppliers purchased their requirements from cleaner alternatives, either at home or abroad. Subsidies may thus distort the competitive playing field.

Unfortunately, the draft guidelines are mute on these critical points. As a result, there is no guarantee that state aid enabled by these guidelines would ultimately reduce CO₂ emissions, let alone do so in a way that is cost-effective.

B. Climate protection or industrial protectionism?

The Commission's draft guidelines and, more generally, policies that seek to prevent carbon leakage may also amplify the scope for industrial protectionism. This protectionist potential is compounded by the fact that the emission-heavy industries, most susceptible to carbon leakage have traditionally been on the receiving end of other protectionist policies.³⁴

The overall problem is simple: Protectionist-minded governments may be tempted to subsidize firms under the pretense that they would otherwise relocate due to the cost of carbon allowances. But it will usually be almost impossible to tell whether firms' plans to relocate are really due to carbon costs, or whether other parameters are also to blame (the cost of labor, other taxes, etc). In the former case, subsidies may, arguably, have a legitimate environmental justification, in the latter they merely amount to protectionism.

Drawing the line between genuine environmental protection and environmental protectionism is thus a daunting task. This is all the more complicated given that the mere existence of carbon leakage subsidies incentivizes firms to posture that they are thinking about offshoring production. This is a direct application of rent-seeking theory: once the prospect of an economic rent is created (in this case, through carbon leakages subsidies), firms will, in all likelihood, expand real resources to obtain it.³⁵

³⁴ For example, the aluminum sector, which falls under the EU's draft guidelines, has arguably been the object of protectionist policies on both sides of the Atlantic. See, e.g., Pieter Cleppe, "Regulation, then protectionism: Is Europe going the way of its aluminium sector?", *EURACTIV* (Jan. 17, 2016), <https://www.euractiv.com/section/trade-society/opinion/regulation-then-protectionism-is-europe-going-the-way-of-its-aluminium-sector/>.

³⁵ See, e.g., Gordon Tullock, *Efficient rent seeking*, in *THE POLITICAL ECONOMY OF RENT-SEEKING*, 3 (2001). See also, Robert D Tollison, *Rent seeking: A survey*, 35 *KYKLOS*, 575 (1982).

With this in mind, one important question is whether the Commission's draft guidelines provide appropriate safeguards against protectionist impulses? The answer appears to be no.

The draft guidelines outline the conditions that **carbon leakage subsidies** must fulfill to be compatible with EU law. In that regard, there are two principle requirements: First, the beneficiary must operate in a sector that is deemed to be prone to carbon leakage (these sectors are listed in Annex I of the draft guidelines). Second, the amount of the subsidy must not exceed a predetermined portion of the beneficiary's carbon costs. Unfortunately, neither of these requirements effectively ensures that aid will only go towards firms that would otherwise offshore production to reduce their carbon costs. For instance, firms that operate in the sectors listed in Annex I would be eligible for carbon subsidies, even if they are not planning to move production towards countries that have more stringent carbon regulations. Likewise, the fact that a subsidy does not exceed a firm's carbon costs does not mean that it cannot be awarded for protectionist reasons, unrelated to CO² emissions.

Similarly, **free allowances for the modernization of electricity generation** could also be exploited to protectionist ends. The draft guidelines do not contain provisions that prevent Member States from using "modernization of electricity generation" subsidies to prevent firms from closing domestic electricity production sites.

In short, the Commission's draft guidelines lack appropriate safeguards that would prevent Member States from misusing carbon-related subsidies for protectionist ends.

C. Distorting competition, and threatening the viability of the ETS

The last source of potential regulatory failure is that subsidies might distort competition and harm the overall viability of the ETS.

The chief virtue of emission permit trading schemes is that they partly alleviate the informational obstacles that would otherwise plague policymakers' attempts to reduce emissions. Once permits are initially allocated – and absent prohibitive frictions – parties are free to exchange them.³⁶ Ultimately, the goal is that least cost avoiders

³⁶ See Coase, *supra* note 6.

will pursue abatement strategies, firms with higher abatement costs will purchase emission permits, and the externalities associated with those emissions will be priced into consumers' decisions.³⁷

One important advantage of this type of system is that it does not require governments to identify the technologies that will lead towards the most cost-effective reduction of emissions. Instead, the winners are revealed by market forces.³⁸

It seems odd that, having put into place, a *relatively* information-light system of emissions exchange, the EU would then reintroduce procedures by which Member States are free to "pick and choose" technologies which, they believe, are most deserving of success. And yet, this is precisely what the Commission's draft guidelines, enabled by Directive 2003/87/EC, would effectively achieve.

This is nowhere clearer than in the allocation of free ETS allowances for the modernization of electricity generation, provided for in article 10c of Directive of the ETS directive, and further outlined in the draft guidelines (though the applicability of this provision is limited to low-income Member States).³⁹ While it may seem desirable to ensure that firms in low-income Member States modernize their electricity production capacity, such initiatives may disincentivize potentially superior alternatives. For instance, these subsidies may discourage providers from purchasing electricity in a neighboring Member State where generators have lower marginal costs of production (perhaps in part as a result of implementing technologies that enable them to reduce emissions at lower cost). The subsidies also prevent market forces from deciding which firms will modernize, and which ones will go out of business.

To its credit, the Commission's draft guidelines do show some awareness about these issues. For instance, the guidelines rightly recognize that free allowances have the **potential to distort competition and entrench incumbents**. They thus stipulate that

³⁷ *Id.*

³⁸ Friedrich August Hayek, *The use of knowledge in society*, 35 THE AMERICAN ECONOMIC REVIEW, 521 (1945). ("The economic problem of society is thus not merely a problem of how to allocate "given" resources-if "given" is taken to mean given to a single mind which deliberately solves the problem set by these "data." It is rather a problem of how to secure the best use of resources known to any of the members of society, for ends whose relative importance only these individuals know. Or, to put it briefly, it is a problem of the utilization of knowledge not given to anyone in its totality.")

³⁹ See Directive 2003/87/EC, art. 10c.

state aid is only compatible with the internal market when such an effect does not occur:

The aid must not adversely affect trading conditions to an extent contrary to the common interest, in particular where aid is concentrated on a limited number of beneficiaries or where the aid is likely to reinforce the beneficiaries' market position (at the group level).⁴⁰

However, despite these positive pronouncements, there are still important loopholes. For one thing, the draft guidelines do not require that modernization efforts be cost-effective compared to importing electricity. Similarly, there is no requirement that subsidizing modernization efforts would ultimately lead to lower emissions than the most cost-effective alternative. In other words, the guidelines tend to assume that modernization is the most cost-effective way to reduce CO₂ emissions, and that it is always socially beneficial to do so. But both of these statements are not necessarily true.

Adding some modest requirements, along the lines suggested above, would go some way towards ensuring that state aid could not be used to distort competition among energy producers located in different Member States, ultimately increasing CO₂ emissions.

Another important risk is that the **overallocation of free ETS allowances** could drastically reduce the cost of carbon emissions for non-beneficiaries (by increasing the quantity of allowances), thus collapsing the entire ETS. This risk is not just theoretical, it has occurred before, as noted above. For instance, during the first phases of the EU ETS, the over allocation of ETS permits created a glut on the allowance market, causing prices to plummet.⁴¹

⁴⁰ Draft guidelines on certain State aid measures, *supra* note 5, §45.

⁴¹ See, e.g., A Denny Ellerman & Barbara K Buchner, *The European Union emissions trading scheme: origins, allocation, and early results*, 1 REV. ENVIRON. ECON. POLICY, 78 (2007). ("The release of the 2005 emissions data in April and May 2006 revealed that the number of allowances distributed to installations in 2005 exceeded those installations' emissions by about eighty million tons or about 4 percent of the total EU cap. This information caused the price for first period allowances to fall by half and the second period futures price to fall by a third."). See also, FRIENDS OF THE EARTH, "The EU Emissions Trading System: failing to deliver" (Oct. 2010), at 4 ("To cushion the introduction of a carbon price in 2005, governments pushed for the right to propose how many permits to allocate to their national industries, then overestimated emissions to justify excessive allocations. The result: European Commission figures show that in the first 2005-2007 EU-ETS phase, only three member states had caps

The Commission's draft guidelines include some modest informational requirements that might marginally reduce this risk:

In any year in which the budget of the aid schemes referred to by section 3.1 exceeds 25 % of the revenues generated from the auctioning of allowances, the Member State concerned must publish a report setting out the reasons for exceeding that amount, in accordance with Article 10a(6) of the ETS Directive. The report must include relevant information on electricity prices for large industrial consumers benefiting from the scheme, without prejudice to requirements regarding the protection of confidential information. The report must also include information on whether due consideration has been given to other measures to sustainably lower indirect carbon costs in the medium to long term.⁴²

Unfortunately, this informational requirement is too weak to effectively prevent free allowances from undermining the ETS. For a start, the informational requirement only applies to free allowances granted to prevent carbon leakage. A similar provision should also be introduced for electricity modernization allowances. More importantly, it may be appropriate to agree upon a hard cap for free ETS allowances, to ensure that these do not significantly affect the market for ETS allowances, potentially leading the system to collapse – as it has done before.

III. Recommendations

Given what precedes, it is our belief that the draft guidelines put forward by the Commission could be improved upon. These changes would certainly not solve all of the complex problems that emission permit trading schemes must avoid, if they are to achieve their stated goals. However, there are strong reasons to believe that the following modest changes would, at least, address some of the most obvious flaws:

1. Free ETS allowances to prevent carbon leakage should only be deemed compatible with the internal market when it has been clearly established that the

that were lower than baseline 2005 emissions levels. This caused a glut on the allowance market - permit prices crashed to a low of €0.03 per ton in December 2007 - and made a mockery of the cap concept.”).

⁴² Draft guidelines on certain State aid measures, *supra* note 5, §61.

beneficiary would otherwise offshore production in such a way as to *increase* net emissions *and* that it operates in one of the sectors outlined in Annex I of the draft guidelines.

2. Free ETS allowances for the modernization of electricity production should only be deemed compatible with the internal market when it is clearly established that (i) modernization would lead to lower *overall* emissions than alternatives (and not just at the plant level), and (ii) that the benefit of modernization outstrip the social cost of emissions.
3. The requirement to inform partners when carbon leakage allowances exceed 25% of total ETS revenue should be extended to include allowances for the modernization of electricity capacity. Moreover, it might be useful to replace the informational requirement with a hard cap on free allowances, that would prevent the price of emission allowances from falling.

The above list is far from exhaustive. And, as we have argued above, there is no guarantee that adding these requirements would be sufficient to prevent the EU's ETS scheme from failing, once again. We do, however, believe that these modest proposals would be a step in the right direction.

Uncertainties remain concerning the desirability and effectiveness of emission trading schemes in abating GHG emissions; the economic literature generally finds that a price instrument – a charge or tax – is more efficient.⁴³ Meanwhile, questions remain as regards to the timing and even overall desirability of reducing GHG emissions in the short to medium term.⁴⁴ Notwithstanding these concerns, governments that do decide to implement such systems should at least strive to limit the potential for deleterious outcomes. Accordingly, they should ensure that these instruments are not any more protectionist than they need to be. Similarly, ETS schemes would be self-defeating if they ultimately led policymakers to pick winners and losers. Finally, policymakers should take care not to over allocate free permits, as these threaten the viability and effectiveness of ETS schemes. As things stand, the Commission's draft

⁴³ Anna Grodecka and Karlygash Kuralbayeva, *The Price vs Quantity debate: climate policy and the role of business cycles*, OXCARRE RESEARCH PAPER 137, 2 (Jan. 24, 2015), <https://www.economics.ox.ac.uk/materials/OxCarre/ResearchPapers/OxCarreRP2014137.pdf>.

⁴⁴ See, e.g., Julian Morris, *Climate Change, Catastrophe, Regulation and the Social Cost of Carbon*, REASON FOUNDATION, i (Mar. 2018), https://reason.org/wp-content/uploads/2018/03/climate_change_social_cost_carbon.pdf. See also, BJORN LOMBORG, *FALSE ALARM: HOW CLIMATE CHANGE PANIC COSTS US TRILLIONS, HURTS THE POOR, AND FAILS TO FIX THE PLANET* (2020).

guidelines do not sufficiently address these risks. Amendments, along the lines that we have suggested, are thus needed.