



Enforcing Environmental Policy – the role of the European Union

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ABSTRACT: The concerns regarding climate change are on the top of government agendas worldwide, and a global response is urgently required given the climate events that countries all over the world are facing. The European Union (EU) is at the forefront, assuming the leadership in environmental policy with several legal initiatives underway, which have culminated in the promulgation of the European Climate Law and the presentation of the proposed Directive of a Carbon Border Adjustment Mechanism (CBAM). Nonetheless, the EU struggles with difficulties regarding the effectiveness of legal measures, in particular carbon leakage problems. Carbon leakage problems prevail globally as production shifts to countries with less stringent climate regulations, avoiding costs in countries with high emission charges. A resolution regarding the implementation of the CBAM was passed by the European Parliament in March 2021. On the 14th of July 2021, the EU presented 13 policy measures aiming to reduce its GHG emissions by 55% by 2030. On the 22nd of June 2022 the European Parliament voted to adopt the regulation about CBAM. As the EU has played a unique and strong role in climate policy enforcement, the aim of this article is to present this policy option, in the light of the oncoming CBAM. Therefore, the 'EU climate club' is imposing coercive environmental tax policies on other countries.

KEYWORDS: Climate change – environmental policy – Carbon Border Adjustment Mechanism.

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1. The role of the European Union in environmental policy

In 1989, Ulrich Beck presented and explained climate change problems by using the concept of a ‘risk society’. According to the author, an “*inescapable structural condition of advanced industrialization and modern society has become (...) a risk society in the sense that it is increasingly occupied with debating, predating and managing risk that it itself has produced, such as the environmental impacts*” that we are facing now.¹ In the book that Ulrich Beck wrote in 2015, where he discusses the state of the world and society in general, he argues that the world is metamorphosing, not just changing.²

Beck starts by stating that “*all institutions are failing*” in response to climate change. He argues that no institutional actor has been decisive or responsive enough to take charge or resolve the situation and that one single country cannot be the answer; a common resolution of all countries in the world is required. Historically, the EU started as an economic organisation in which the protection of the single market was always on top of the agenda in any of its legislative processes. Nevertheless, at the same time, the EU has always pursued an ambitious approach to climate governance.³ Regarding this, four important periods have been identified in the EU environmental history: i) the establishment and early growth of EU environmental policies from 1967 to 1984, ii) reconciling market and policy impulses from 1985 to 1999, iii) challenging ‘normal’ environmental governance from 1999 to 2008, and iv) the uncertain future from 2008 onwards.⁴

Pursuant to the Amsterdam Treaty and Article 11 of the Treaty on the Functioning of the EU (TFEU), regulations regarding environmental protection must connect to EU policies to achieve sustainable development. Therefore, as mentioned in Article 3(3) TEU, economic development must be a “*sustainable development based (...) on a high level of protection and improvement of the quality of the environment*”. However, it was Articles 191 to 193 TFEU that environmental policy became prominent in European policy.

International and European policy focuses on the environmental tax policy on different principles that could be considered the ‘best practice approach’. In the literature those principles are referred to as “core principles” in environmental taxation and they are the following: i) the Polluter Pays Principle, ii) the Principle of Prevention, iii) the Precautionary Principle, and iv) the Principle of Common but Differentiated Responsibilities. The Polluter Pays Principle is based upon the idea that the polluter should bear the cost of pollution instead of the community as a whole. Thereby, a carbon tax fits this idea and internalises the environmental cost. The aim of the Precautionary Principle encompasses the preventive measures that should be enacted when there is a risk of future long-term harm to the environment that cannot be fully assessed at the time of the decision-making process. The third principle – the Principle of Prevention – states that countries can exploit their own resources and at the same time must bear the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment. The last Principle of Common but Differentiated Responsibilities, assumes that all countries are to share

¹ Ulrich Beck, *World Risk Society* (1st edition, Oxford: Polity Press, 1999).

² Ulrich Beck, *The Metamorphosis of The World: How Climate Change Is Transforming Our Concept of The World* (1st ed, Cambridge: Polity Press, 2016).

³ Ingmar von Homeyer, Sebastian Oberthür and Andrew J. Jordan, “EU climate and energy governance in times of crisis: towards a new agenda”, *Journal Of European Public Policy*, vol. 28, no. 7 (2021), 959-979.

⁴ Antony R. Zito, Charlotte Burns and Andrea Lenschow, “Is the trajectory of European Union environmental policy less certain?”, *Environmental Politics*, vol. 28, no. 2 (2019): 187-207.

the responsibility for environmental problems but according to different levels of engagement.⁵ This level is measured according to a country's social, economic or political situation.

EU ecological modernisation and evolution have also been driven by environmental policy instruments, for example, the emissions trading scheme that was set up in 2005. After more than 50 years of policy expansion, EU scholars believe that the most likely reason behind the failure of the EU environmental policies is the poor implementation of EU policies.⁶ The EU environmental policy can be viewed/considered in three different perspectives. Firstly, the environmental policy has matured to the point where most environmental challenges are being addressed.⁷ Secondly, EU environmental policy is now more selective.⁸ The last explanation is the political gridlock that the EU is facing.

Thereby, over the last 50 years of policy expansion, the EU has been developing an *Acquis Communautaire* environment which sheds light on some other relevant initiatives across the globe such as the Paris Agreement. The Paris Agreement, signed on the 22nd April 2016 and entered into force on the 4th of November 2016, is the first legally binding international treaty on climate change adopted at the 21st Conference of Parties (COP21) in December 2015. The EU and its Member States are among 190 Parties to the Paris Agreement. The EU formally ratified the agreement on the 5th of October 2016, enabling its entry into force in at least 55 countries representing 55% of global emissions. In addition, the Paris Agreement has become a bridge between policies and the common aim of climate neutrality. The goal is to mitigate or reduce greenhouse gas (GHG) emissions. The EU, as an international actor, had a fundamental role in pushing the Paris Agreement into existence and pushing environmental policies onto the international agenda, showing clear leadership.⁹

The EU wants to go further. The European Green Deal represents its attempt to reshape the EU economy into a modern, resourceful, efficient and competitive economy. Therefore, in 2020 and 2021, the European institutions presented several legal frameworks such as the new European Climate Law, a package of legislation, and the CBAM mechanism – a unique proposal worldwide.

In this process of environmental policy-designing and implementation, two options are available: the top-down and bottom-up approaches. The top-down approach is where policies are passed down from regional to national levels, while the bottom-up approach refers to the early involvement of local levels with subsequent influence on a national level. However, the top-down approach has often been criticised for over-centralising policy making, whereas the bottom-up approach is

⁵ See Ana Paula Dourado, Alice Pirlot, Edoardo Traversa, "Environmental tax: international tax coordination & global environmental challenges", Editorial, *Intertax*, vol. 42, no. 11 (2021): 866-870. See Tatiana Falcão, "Policy Note: highlights of the United Nations handbook on carbon taxation", *Intertax*, vol. 42, no. 11 (2021): 897-914.

⁶ Rüdiger K. W. Wurzel, *Environmental policy: EU actors, leader and laggard states*, in *Leaderless Europe*, (Oxford: ed. Jack Hayward, 2008).

⁷ Andrew Jordan, Michael W. Bauer, and Christoffer Green-Pedersen, "Policy dismantling", *Journal of European Public Policy*, vol. 20, no. 5 (2013): 795-805.

⁸ David Vogel, "The hare and the tortoise revisited: the new politics of consumer and environmental regulation in Europe", *British Journal of Political Science*, vol. 33, no. 4 (2003): 557-580.

⁹ Tim Rayner and Andrew Jordan, "The European Union: the polycentric climate policy leader?", *Wiley Interdisciplinary Reviews: Climate Change*, vol. 4, no. 2 (2013): 75-90.

criticised for over-emphasising local demands.¹⁰ Thus, international climate policies have been moving towards a hybrid approach, combining the strengths of both approaches.¹¹ Furthermore, according to some scholars, balancing the top-down and the bottom-up approaches is a more effective way of implementing global climate policies.¹² The top-down approach was embodied by the Kyoto Protocol and the bottom-up approach by the Copenhagen–Cancun pledges.

The Paris Agreement was designed with a bottom-up approach. Therefore, each country is called to account for its individual responsibility. Accordingly, it is mandatory for countries to draw national climate targets, namely nationally determined contributions (NDCs), which must be ambitious enough to address their environmental problems and increase in five-year cycles. The EU and its Member States have also submitted their national NDCs. The role and influence of the Paris Agreement in rich and developed countries represent a challenge to developing countries to enforce a comparable global climate policy since developing countries struggle to comply with the same standards. Nonetheless, the Paris Agreement took that into consideration by implementing Article 4 of the agreement, which states that “*the responsibility of the parties is in accordance with their common but differentiated responsibilities and capabilities in light of different national circumstances.*”¹³

2. Key measures in the European Union

The EU is working to become the first carbon-neutral continent by 2050 and is coercing other countries by imposing certain standards on them if they want to trade with the EU block. Therefore, the latest step in reaching this goal was taken on 9 July 2021 when the EU published Regulation (EU) 2021/1119, the European Climate Law, which safeguards the EU’s main and profound goals of reducing net GHG emissions by at least 55% by 2030 compared to the level in 1990. This is driving the EU towards carrying out a series of reforms.¹⁴ Therefore, the European Climate Law does not promote any actual measures or actions, but, instead, sets out a process to ensure that Europe stays on track to achieve its 2050 climate neutrality goal. Under this law, Member States are required to hand in progress reports each year which are followed up with feedback and recommendations provided by the Commission. Furthermore, the European Climate Law came into practice on the 30th of July 2021. It is a central element developed under the auspices of the European Green Deal, which was presented by Ursula von der Leyen, in December 2019 by the President of the European Commission.¹⁵

¹⁰ Lucie Cerna, “The nature of policy change and implementation: a review of different theoretical approaches”, OECD (2013).

¹¹ Jos Debelke and Vis Peter, “A way forward for a carbon border adjustment mechanism by the European Union”, *European University Institute – STG Policy Briefs 6* (2020).

¹² Jessica F. Green, Thomas Sterner, and Gernot Wagner, “A balance of bottom-up and top-down in linking climate policies”, *Nature Climate Change*, vol. 4, no. 12 (2014): 1064-1067.

¹³ United Nations, *Paris Agreement*, 2015.

¹⁴ Regulation (EU) 2021/1119 of the European parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 (‘European Climate Law’), L 243/1, 9.7.2021.

¹⁵ European Commission, Directorate-General for Communication, Ursula Von Der Leyen, “A Union that strives for more: my agenda for Europe: political guidelines for the next European Commission 2019-2024”, Publications Office, European Union (2019).

Apart from the above-mentioned legal instruments, several steps were also taken to study the proposed Carbon Border Adjustment Mechanism (CBAM) due to its importance to curtail problems that the EU faces associated with the risk of carbon leakage. Carbon leakage problems are prevailing globally as production is being moved to countries with less stringent climate regulations, avoiding costs in countries with high emission charges. Historically, in March 2020, the European Commission published an Inception Impact Assessment Report, analysing potential options for implementing the CBAM.¹⁶

Plus, on the 22nd of July 2020, the European Commission opened a public consultation on the CBAM proposal to study the policy’s options and legal design features. Since then, the President of the EU has presented her ambitious plan, the ‘Fit for 55 Package’, finally agreed on 14th July 2021, in which she presented the EU’s policy path to achieve the 2030 target.¹⁷ This has also paved the way for the CBAM’s legislative proposal. On the 15th of March 2022, the Council reached an agreement regarding the CBAM proposal. Finally, on the 22nd of June 2022, the European Parliament adopted the carbon legislation with a majority of votes. The package includes: i) the revision of the EU Emission trading system; (ii) the new CBAM; and (iii) and the social climate fund.

The aim of the CBAM legal initiative is to reduce the risk of carbon leakage and to spread European policy to other jurisdictions in order to meet the minimum thresholds set up by the EU. As mentioned before, due to the economic power that the EU economy represents, this political measure is going to be imposed coercively on other jurisdictions.¹⁸

The ‘Fit for 55 Package’ mentioned above is a set of proposals whose main goal is to align European legislation with the climate aims agreed by the European Parliament and the Council. Thereby, the EU has established the following legally binding milestones:

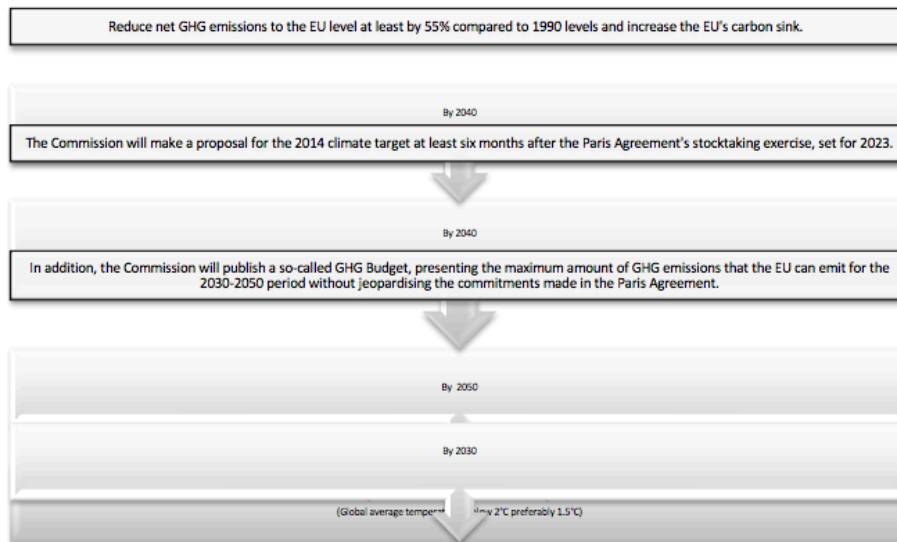


Figure 1: Milestones of the European Climate Aims
Source: The Author

¹⁶ European Commission, “The European Green Deal – Inception impact assessment”, Ref. Ares(2020)1350037 – 04/03/2020.

¹⁷ European Commission, “Fit for 55 Package”, 2021.

¹⁸ Jean-Frederic Morin and E. Richard Gold, “An integrated model of legal transplantation: the diffusion of intellectual property law in developing countries”, *SSRN Electronic Journal* (2013).

Apart from proposing to introduce a carbon border measure to address the problems associated with carbon leakage, the EU has also introduced or proposed other policies for environmental protection to achieve its climate goals. The new European Climate Law ensures that national governments are legally obliged to act on the following measures introduced in the European Green Deal. The following legislative proposals and policy initiatives are included in the ‘Fit for 55 Package’: i) a proposal for a Carbon Border Adjustment Mechanism;¹⁹ ii) a revision of the EU Emissions Trading Systems (EU ETS);²⁰ iii) a revision of the Renewable Energy Directive;²¹ iv) a revision of the Energy Efficiency Directive;²² v) a revision of the Regulation on the Inclusion of Greenhouses Gas Emissions and Removals from Land use, Land use Change and Forestry (LULUCF);²³ vi) a revision of the Energy Tax Directive;²⁴ vii) A revision of the Directive on the Deployment of Alternative Fuels Infrastructure;²⁵ viii) a revision of the Regulation setting CO2 Emission Standards for Cars and Vans;²⁶ ix) a revision of the effort Sharing Regulations;²⁷ x) a proposal for a Regulation on Sustainable Aviation Fuels;²⁸ xi) a proposal for a Directive on Sustainable alternative Fuels in Maritime Transport;²⁹ xii) a proposal

¹⁹ European Commission, “EU Green Deal (carbon border adjustment mechanism) – Proposal for a regulation”, accessed October 15, 2022, https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12228-EU-Green-Deal-carbon-border-adjustment-mechanism_en.

²⁰ European Commission, “Climate change – updating the EU emissions trading system (ETS) – Proposal for a directive”, accessed October 15, 2022, https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12660-Climate-change-updating-the-EU-emissions-trading-system-ETS_en.

²¹ European Commission, “EU renewable energy rules – review – Proposal for a directive”, accessed October 15, 2022, https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12553-EU-renewable-energy-rules-review_en.

²² European Commission, “EU energy efficiency directive (EED) – evaluation and review – Proposal for a directive”, accessed October 15, 2022, https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12552-EU-energy-efficiency-directive-EED-evaluation-and-review_en.

²³ European Commission, “Land use, land use change & forestry – review of EU rules – Proposal for a regulation”, https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12657-Land-use-land-use-change-&-forestry-review-of-EU-rules_en.

²⁴ European Commission, “EU Green Deal – Revision of the Energy Taxation Directive – Proposal for a directive”, accessed October 15, 2022, https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12227-EU-Green-Deal-Revision-of-the-Energy-Taxation-Directive_en.

²⁵ European Commission, “Alternative Fuels Infrastructure – evaluation” – Evaluation, accessed October 15, 2022, https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/2111-Alternative-Fuels-Infrastructure-evaluation_en.

²⁶ European Commission, “CO2 emissions for cars and vans – revision of performance standards” – Proposal for a regulation, accessed October 15, 2022, https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12655-CO2-emissions-for-cars-and-vans-revision-of-performance-standards_en.

²⁷ European Commission, “National emissions reduction targets (Effort Sharing Regulation) – review based on 2030 climate target plan” – Proposal for a regulation, accessed November 21, 2022, https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12656-National-emissions-reduction-targets-Effort-Sharing-Regulation-review-based-on-2030-climate-target-plan_en.

²⁸ European Commission, “Sustainable aviation fuels – ReFuelEU Aviation” – Proposal for a regulation, accessed October 15, 2022 https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12303-Sustainable-aviation-fuels-ReFuelEU-Aviation_en.

²⁹ European Commission, “CO2 emissions from shipping – encouraging the use of low-carbon fuels” – Proposal for a regulation, accessed October 15, 2022, https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12312-CO2-emissions-from-shipping-encouraging-the-use-of-low-carbon-fuels_en.

for Climate Action Social Facility;³⁰ xiii) a new EU Forestry Strategy;³¹ xiv) a proposal for a Regulation to Reduce Methane Emissions in the Oil, Gas, and Coal sectors (expected last quarter of 2021);³² xv) a revision of the Energy Performance of Building Directives (expected last quarter of 2021);³³ xvi) a revision of the Third Energy Package for Gas (decarbonizing gas markets) expected last quarter of 2021;³⁴ an xvii) the application of a Uniform call rate to the Weight of Plastic Packaging Waste generated in each Member State that is not recycled the uniform call rate shall be EUR 0.80 per kilogram.³⁵

3. The judicial law-making process

If, on the one hand, policymakers are drafting measures and rules to protect the environment, the courts are now also playing a role in enforcing the climate policy, with the rise of a judicial law-making process. This case involving “Royal Dutch Shell (RDS)” opens the door to a new path in jurisprudence to decide climate change cases because it forces multinational companies to change their behaviour and comply with the rules. The Shell decision is relevant in terms of judicial law-making power because the court emphasised that all companies have the obligation to respect human rights, although there is no mechanism to enforce the court decision.

Regarding the case on 26th May 2021, the court of first instance of The Hague judged a climate case against the oil giant RDS.³⁶ RDS has been the top holding company of the Shell group whose head office is established in The Hague. This was the first time a court has ordered a company, “*both directly and via the companies and legal entities it commonly includes in its consolidated annual accounts and with which it jointly forms the Shell group, to limit or cause to be limited the aggregate annual volume of all CO2 emissions into the atmosphere due to the business operations and sold energy-carrying products of the Shell group to such an extent that this volume will have reduced by at least net 45% at end 2030, relative to 2019*”

³⁰ European Commission, Proposal for a regulation of the European Parliament and of the Council establishing a Social Climate Fund, Brussels, 14.7.2021, COM(2021) 568 final, 2021/0206(COD), accessed October 15, 2022, <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A52021PC0568>.

³¹ Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 (‘European Climate Law’), accessed October 15, 2022, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2021.243.01.0001.01.ENG&toc=OJ%3AL%20%3A2021%3A243%3ATOC.

³² European Commission, “Climate change – new rules to prevent methane leakage in the energy sector” – Proposal for a regulation, accessed October 15, 2022, https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12581-Climate-change-new-rules-to-prevent-methane-leakage-in-the-energy-sector_en.

³³ European Commission, “Energy efficiency – Revision of the Energy Performance of Buildings Directive” – Proposal for a directive, accessed October 15, 2022, https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12910-Energy-efficiency-Revision-of-the-Energy-Performance-of-Buildings-Directive_en.

³⁴ European Commission, “Gas networks – revision of EU rules on market access” – Proposal for a regulation, accessed October 15, 2022, https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12766-Gas-networks-revision-of-EU-rules-on-market-access_en.

³⁵ Council Decision (EU, Euratom) 2020/2053 of 14 December 2020 on the system of own resources of the European Union and repealing Decision 2014/335/EU, Euratom, accessed October 15, 2022, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020D2053&from=en>.

³⁶ Judgment District Court of The Hague *Milieudefensie ea v Royal Dutch Shell*, May 2021, HAZA C/09/571932.

levels.” In other words, the Court has ordered Shell to reduce emissions by a net 45% across both emissions from its own operations and emissions from the use of the oil it produces.

The case drew on the previous ‘Urgenda decision’, which found that the Dutch government took inadequate action on climate change, violating a duty of care to its citizens.³⁷ In the RDS case, the court agreed with the claimants pursuing the argument against private companies, arguing that RDS has a legal duty according to the Paris Agreement objectives and scientific evidence. The legal support of this decision is an international human rights law which is applied indirectly to a private entity, like RDS, through an open norm of Dutch private law. Thus, for the court, human rights are heavily impacted. The United Nations guiding principles of human rights also emphasise that corporations have the obligation to respect human rights.

This case law opens the door to a new path in jurisprudence to decide climate change cases. Four broad conclusions are highlighted in this case: i) the judge emphasised that Shell must do its best to reduce its emissions worldwide, ii) a sustainable environment is a human right which requires protection, iii) Shell argued that it complies with the EU emission trading schemes. However, the Court rejected the Emissions Trading System (ETS) argument on the grounds that the ETS only applies to the part of the emissions that Shell was responsible for in Europe; emissions outside of Europe were not covered; iv) the playing field is level for all companies, independently of what state or society does.

4. Climate problem dilemma

The main goal of the EU is to re-adjust the economy in accordance with its environmental problems.³⁸ Furthermore, the EU has always been ambitious on climate governance, since 1990 but specifically, over the last decade. Nevertheless, the EU climate governance work faces a major problem regarding public good theory, as characterised by Paul Samuelson in 1954.³⁹

The climate, or the environment, seen as a public good represents a global and social dilemma, as two key attributes of public goods are presented: i) the non-rivalry and ii) the non-excludability.⁴⁰ The theory of public goods applied to climate change is relevant to explaining the environmental economy and the policy options drawn up by policymakers. Climate change is a politically sensitive issue as people who cope with the climate problems, or pay for them, are generally not the same people who benefit from them. Furthermore, the question of governance is also very sensitive in the field of climate change due to negative externalities in the form of GHG emissions. Global externalities, such as global warming, are those whose impact is indivisible and therefore easily spread around the globe. To fight global externalities, it is necessary for all countries worldwide to take concerted action and to make efforts on top of the EU legal measures. Therefore, in the past, nations have had limited success with agreements to deal with global economic externalities. Global policies

³⁷ Judgment District Court of The Hague *Urgenda Foundation v. State of the Netherlands*, June 2015, HAZA C/09/00456689.

³⁸ European Commission, “The EU Green Deal – a roadmap to sustainable economies”, 2021.

³⁹ Paul A. Samuelson, “The Pure Theory of Public Expenditure”, *The Review of Economics and Statistics*, vol. 36, no. 4 (1954): 387.

⁴⁰ Gernot Wagner and Martin L Weitzman, *Climate Shock: The Economic Consequences of a Hotter Planet* (1st ed. Princeton University Press, 2016).

on climate change have been so ineffective compared with national policies, and the international agreements tend to fail due to problems such as free riding.⁴¹ Countries tend to seek their own national interests (Figure 2). Free riding is a major obstacle in the solution of global externalities, and it lies at the heart of the failure to deal with climate change.⁴² Nevertheless, it should be highlighted that literature on climate change has generally ignored the small steps that many public and private actors are taking. Therefore, Elinor Ostrom calls for attention to be given to the role of polycentric systems, a positive step taken by multinational companies.⁴³

It is relevant to bear in mind that nations must raise the price of fossil fuels to further protect the environment. If not, firms, companies, individuals and countries will ‘free ride’, taking the benefits of using fossil fuels without paying for their environmental costs. Unless those externalities are taken into consideration in the consumer price, these parties will have no incentive to supplement their consumption with a more environmentally sustainable alternative. The policy that the EU is building and the global approach necessary to address climate challenges both require global governance, combining different approaches and goals from national environmental policies (Figure 3). In addition to these measures, relevant judicial power will help and support this metamorphosis in society by obliging different parties around the world to comply with international standards.

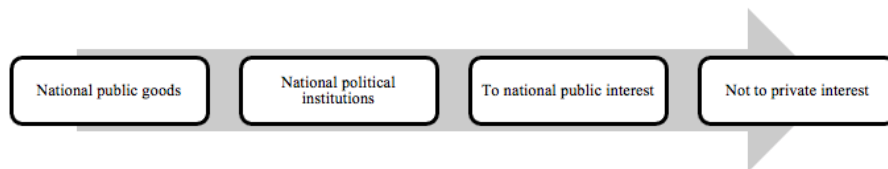


Figure 2: The Governance of National Perspective
Source: The Author

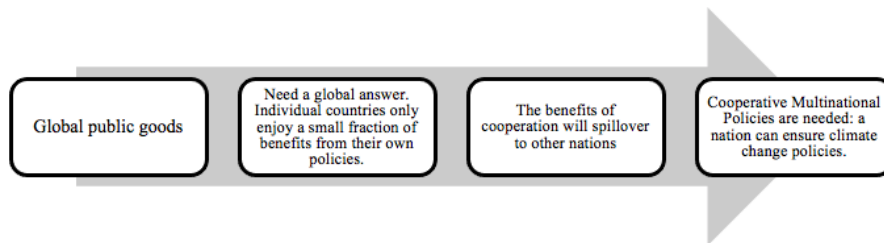


Figure 3: Global Governance
Source: The Author

4.1 Carbon Pricing

To implement an efficient global policy, it is essential to put a ‘price’ on emissions of carbon into the atmosphere.⁴⁴ More than that, it is necessary that the measure must be multilateral otherwise unilateral measures could be and are ineffective. Historically,

⁴¹ William Nordhaus, “Climate clubs: overcoming free-riding in international climate policy”, *American Economic Review*, vol. 105, no. 4 (2015): 1339-1370.

⁴² William Nordhaus, “Climate change: the ultimate challenge for economics”, *American Economic Review*, vol. 109, no. 6 (2019): 1991-2014.

⁴³ Elinor Ostrom, “Nested externalities and polycentric institutions: must we wait for global solutions to climate change before taking actions at other scales?”, *Economic Theory*, vol. 49, no. 2 (2010): 353-369.

⁴⁴ To implement an efficient global policy, it is essential to put a price on the emission of carbon into the atmosphere.

in 1975, it was recognised as a fiscal question with the interpretation of a carbon tax.⁴⁵ The development of environmental taxation dates back to Pigou, who explained the idea of negative externalities that should be internalised by the state. The question was therefore associated with the concept of the social cost of carbon. The social cost of carbon is the economic cost caused by an additional ton of carbon dioxide emissions. When a ton of carbon dioxide is emitted into the atmosphere, it raises global temperatures. The cost, or the optimal carbon price, is usually calculated using an integrated assessment model (IAMs). Nordhaus uses a dynamic integrated model of the climate and economy (DICE), which has become important in policy analysis.⁴⁶

The social cost of carbon helps work out how much society should sacrifice to avoid climate change. This is because the social cost of carbon also affects the benefit, which is the damage avoided by reducing emissions of CO₂. This is the key guide to policy makers in indicating how much social benefit would arise from reducing CO₂ emissions. It shows that climate policies will pay for themselves, as long as the economic sacrifices involved do not exceed the social cost of carbon. In addition, the social carbon cost has an important role in designing climate policy.⁴⁷ The price of carbon should also be equal to the social cost of carbon because, when consuming carbon, the economic decisions will be more rational and consistent.⁴⁸

However, the question is how to design carbon pricing appropriately? Economists point out an inconvenience about climate policy changes: for any policy to be effective, it must raise the market price of CO₂ and others GHG emissions. Putting a price on emissions corrects the under-pricing of the externalities in the marketplace. Prices can be raised by putting a regulatory limit on the amount of allowable emissions, allowing trading (cap and trade), or levying a tax on carbon emission (carbon tax). This reflects a basic economic principle: the waste of any activity is a cost that must be paid.⁴⁹ European countries apply a price with a cap-and-trade mechanism, with the cap setting an overall limit on emissions. Therefore, firms with a low cost of emissions reduction reduced their emissions and sold their allowances to firms with high costs, who in turn continued emitting high levels of CO₂ and gases, while the whole set of participants stayed within the limit. However, the prices in the cap-and-trade arrangement have thrown up several problems.

4.2 The European Union Emission Trading System

The EU ETS is an important part of the EU's climate legislation, and a key contributor to the EU's climate targets.⁵⁰ Introduced in Directive 2003/87/EC, the EU ETS came into force in 2005, operating in all 30 states within the European

⁴⁵ See William D. Nordhaus, "Carbon taxes to move toward fiscal sustainability", *The Economists' Voice*, vol. 7, no. 3 (2010). See William D. Nordhaus, "Economic Growth and climate: the carbon dioxide problem", *The American Economic Review*, vol. 67, no. 1 (1977): 341-346.

⁴⁶ William D. Nordhaus, "Revisiting the social cost of carbon", *Proceedings of The National Academy of Sciences*, vol. 114, no. 7 (2017): 1518-1523.

⁴⁷ Andrea Baranzini, *et al.*, "Carbon pricing in climate policy: seven reasons, complementary instruments, and political economy considerations", *Wires Climate Change*, vol. 8, no. 4 (2017).

⁴⁸ Alex Bowen, "The case for carbon price", *Grantham Research*, policy brief, 1st ed. (2011).

⁴⁹ Jesse D. Jenkins, "Political economy constraints on carbon pricing policies: what are the implications for economic efficiency, environmental efficacy, and climate policy design?", *Energy Policy*, vol. 69 (2014): 467-477.

⁵⁰ Matteo Fermeiglia, "Recent developments in EU environmental policy and legislation", *Journal for European Environmental & Planning Law*, vol. 19, no. 1-2 (2022): 129-137.

Economic Area (EEA).⁵¹ Furthermore, from the beginning of 2020, the EU ETS connected to the Swiss ETS, broadening the EU emission-trading market.⁵² The EU ETS generally applies to three different greenhouse gases, which are carbon dioxide (CO₂), nitrous dioxide (N₂O), and perfluorocarbons (PFCs), covering the manufacturing, aviation, and power generation sectors.⁵³

The system works under the ‘cap and trade’ principle.⁵⁴ A cap is set to limit the total amount of a certain GHG that can be emitted under the system, and it is reduced each year so that emissions fall over time and the EU’s GHG emission targets are achieved. Within the cap, free emission allowances are allocated to each participant and may be traded within the EEA market. Unused allowances can be carried forward for future needs, while heavy fines are incurred where the participant’s total emissions exceed their available allowances.

Normally, carbon prices in the EU ETS represent the trade prices of the emission allowances, and they are determined freely by the demand and supply of the market.

The EU ETS is an environmental legislation and the decisions regarding the policy are decided at a European level, with Member States legally bound to follow them.⁵⁵ The implementation of the policy was carried out in phases (Figure 4).



Figure 4: The EU Emission Trading System Carbon Price Historical Trend

Source: International Monetary Fund/European Department (2020)

In Phase 1, between 2005 and 2007, the primary purpose of the ETS was to bring the policy into practice and to successfully establish a carbon price in the free market. In Phase 2, between 2008 and 2012, several Member States started to hold

⁵¹ Directive 2003/87/EC of the European parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, L 275/32, 25.10.2003.

⁵² World Bank Group, *State and Trends of Carbon Pricing 2020* (Washington, DC: World Bank, 2010).

⁵³ European Commission, “EU ETS Handbook”, European Union, 2015.

⁵⁴ Robert Hahn and Robert Stavins, “The effect of allowance allocations on cap-and-trade system performance”, *The Journal of Law & Economics*, vol. 54, no. 4 (2011): 267-294.

⁵⁵ Jon Birger Skjærseth and Jørgen Wettestad, “Implementing EU emissions trading: success or failure?”, *International Environmental Agreements: Politics, Law And Economics*, vol. 8, no. 3 (2008): 275-290.

auctions of emission allowances, and the aviation industry was also brought into the system. In Phase 3, between 2013 and 2020, auctioning of emission allowances was officially added into the system and operated under the supervision of ETS Directive 2003/87/EC and the Auctioning Regulation. The use of international credits was also introduced in Phase 3, where EU ETS participants can use credits from co-operating countries' projects to fulfil part of their emission obligations within the system.⁵⁶

The 2008 global financial crisis had a significant impact on the European emission trading market. As emissions fell due to the economic downturn, allocated allowances hugely exceeded actual emissions. As seen from Figure 5, this impact caused the carbon price to fall from 25 EUR/tCO₂e to 5 EUR/tCO₂e, during Phase 2 of the EU ETS. With too many unused emission allowances being carried forward, allowance surplus amounted to 2 billion at the beginning of Phase 3. To solve this problem, in Phase 4 (2021 to 2030) of the EU ETS project, the Market Stability Reserve was introduced so that unused emission allowances could be put into this reserve and re-allocated proportionally in the future. Another aim of the EU ETS is a 43% reduction of GHG emissions within the system by 2030, compared to 2005 levels. To achieve this target, emissions will need to be reduced by an average of 2.2% each year within the system from 2020 onwards.

Since 2020 and the introduction of the Market Stability Reserve, the EU ETS has performed significantly well. The carbon price within the system has remained stable at approximately 20 EUR/tCO₂e, after a short-term drop, despite the impact of the COVID-19 pandemic.⁵⁷ In addition, the high compliance with the policy can be attributed to the slow decline of the emission cap; GHG emissions under the system fell 9.1% in 2019 compared to the figures for 2018. Furthermore, in 2019, the auctioning of the ETS allowances generated revenues exceeding EUR 14 billion, of which roughly EUR 11 billion was spent on climate-related projects.

From a global standpoint, the EU ETS has become one of the most successful emissions control tools in the world.⁵⁸ Overall, the world's carbon pricing initiatives covered approximately 15% of the global GHG emissions in 2020, with the EU ETS alone covering a third of that total.

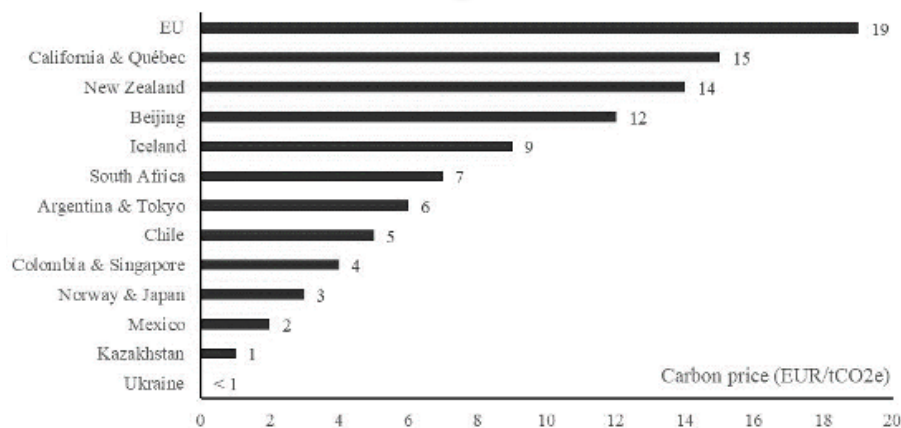


Figure 5: Countries with Lower Carbon Price than the EU ETS, as of 1st April 2020
Source: World Bank Group (2020)

⁵⁶ European Union, “EU Emissions Trading System (EU ETS)”.

⁵⁷ Jiaqian Chan, *et al.*, “European Union climate mitigation policy”, International Monetary Fund/European Department (2020).

⁵⁸ Peter Heindl and Andreas Löschel, “Designing emissions trading in practice – general considerations and experiences from the EU emissions trading scheme (EU ETS)”, *SSRN Electronic Journal* (2012).

However, this creates the problem of carbon leakage, where high emissions from exporters to the EU market pulled up the total emissions consumed in the EU, even though emissions produced in the EU were low. For example, in 2015, the GHG emissions from the EU's imported products were more than three times that of its exported products.⁵⁹ It is for this reason that the EU aims to bring the CBT border measure into effect, not only to contribute to the EU's climate targets but also to help the world address climate change.

The success of the EU ETS has also led to EU producers having to bear a higher carbon price and hence a higher cost for their products, compared to countries that have lower or no carbon pricing initiatives. Figure 5 shows countries with a lower carbon price than the EU, including several developed countries. A higher cost for domestic products jeopardises the EU's competitiveness both within its own market and in international trade. Furthermore, manufacturers are likely to move their production processes to countries with lower carbon prices to lower production costs. Therefore, allowing the EU-produced goods to remain competitive in the EU Internal Market, is necessary to establish the EU CBT, which ensures comparable carbon charges for all products, regardless of their country of origin.

4.3 Historical proposals within the European Union

The growth of the EIS in the EU has ignited an intense debate regarding border measures to address the issue of carbon leakage. To date, there have been three proposals to solve this issue. Although none have ultimately been adopted, they can provide insights into the design and implementation of the proposed CBT policy.⁶⁰

Firstly, in 2007, the European Commission drafted a proposal as part of the EU ETS Phase 3 reform, which included a new Article 29, aiming to replace the former Article 29 of the 2003 ETS Directive. The new Article 29 set out a 'Future Allowance Import Requirement' (FAIR), which planned to remove the 'free allowance allocation provision' operated under Phase 1 and 2 of the ETS, and, furthermore, to include EU importers in its ETS system starting from 2015. It also set out rules for the EU's export allowance adjustment.⁶¹

Even though the FAIR proposal was not adopted, in Article 10b of Directive 2009/29/EC, the European Parliament and the Council mandated the Commission to submit, by 30 June 2010, an analytical report assessing options in addressing carbon leakage problems in energy-intensive sectors. Potential options listed in the Directive were: (1) the adjustment of free allowance allocation, (2) the inclusion of importers in the EU ETS, and (3) assessing and proposing measures to address the energy sectors' carbon leakage.

Secondly, in 2009, in response to Directive 2009/29/EC Article 10, the French government proposed a 'Carbon Inclusion Mechanism' (CIM) that detailed how to

⁵⁹ Paola Fezzigna, Simone Borghesi and Dario Caro, "Revising emission responsibilities through consumption-based accounting: a european and post-brexit perspective", *Sustainability*, vol. 11, no. 2 (2019): 488. DOI:10.3390/su11020488.

⁶⁰ Peter Heindl and Andreas Löschel, "Designing emissions trading in practice – general considerations and experiences from the EU emissions trading scheme (EU ETS)".

⁶¹ Catherine Boemarea, Philippe Quiriona and Steve Sorrell, "The evolution of emissions trading in the EU: tensions between national trading schemes and the proposed EU directive", *Climate Policy* vol. 3, no. 2 (2003): 105-124.

include importers in the EU ETS (OECD, 2020). The report highlighted the need for a WTO-compatible CIM, which also suggested exempting the least developed countries from the CIM. As with the 2007 FAIR proposal, the CIM would only take into account the direct emissions of the imported products.

In 2015, the Paris Agreement was achieved by 196 parties at COP 21, and it set a goal of limiting global warming to 2 degrees Celsius. Countries are legally obliged to take actions to achieve this goal, through the setting of their own climate targets based on their respective capabilities.⁶² These so-called Nationally Determined Contributions (NDCs) do not restrict the types of measures parties can adopt; instead, they require commitment to achieve these self-determined targets in each five-year cycle.

Thirdly, in 2016, soon after the Paris Agreement, a French non-paper again proposed a different but more detailed carbon inclusion mechanism (CIM).⁶³ It suggested that, for imported products to be included in the carbon border adjustment plan, they must meet three criteria: (1) they must have high carbon intensity and account for a significant share of the GHG emissions in the EU, (2) it should be easy to determine their carbon content, and (3) the plan would not affect the products' downstream sectors significantly. Furthermore, it suggested testing this new CIM in the cement sector, as the cement sector met all the above criteria and had low trade intensity, which would reduce the administrative complexity of the measure. The non-paper also argued that the EU ETS does not prevent carbon leakage problems, despite generating large revenues, and carbon leakage would be better addressed by the proposed CIM rather than the EU ETS. Figure 6 presents an outline of the key timings of the EU carbon measures from 2000 onwards.

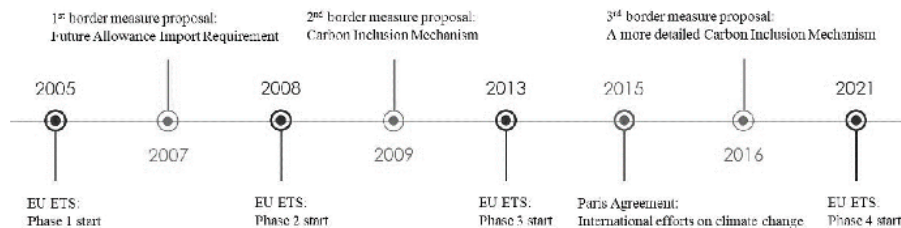


Figure 6: Timeline of EU ETS Progress and Other Relevant Border Measure Events
Source: The Author

In summary, all three proposals aimed at addressing the carbon leakage problems through including the EU's importers into the existing EU ETS. Although none of them were successfully adopted, details regarding the design of these past proposals were considered in the published CBT documents, particularly in the Resolution on a WTO-compatible EU Carbon Border Adjustment Mechanism.⁶⁴ These similarities are: (1) the CBT is going to be compatible with the WTO international trade rules, as also proposed by the 2009 CIM; (2) energy-intensive sectors will be assessed and included at the beginning of the CBT programme, as

⁶² United Nations, *Paris Agreement*, 2015.

⁶³ Ministère de l'Environnement, de l'Énergie et de la Mer, "Non paper – a soft price collar for the European carbon market," *Economics and Policy of Energy and the Environment*, FrancoAngeli Editore, vol. 2016, no. 1 (2016): 41-46.

⁶⁴ Stéphanie Monjon and Philippe Quirion, "A border adjustment for the EU ETS: reconciling WTO rules and capacity to tackle carbon leakage", *Climate Policy*, vol. 11, no. 5 (2011): 1212-1225.

proposed by the European Parliament and the Council in their Directive 2009/29/EC; and (3) the three criteria for imported products, which were suggested in the 2016 French non-paper, are also considered in the implementation of the CBT mechanism. However, in the calculation of the carbon content, the new CBT is likely going to include both direct and indirect emissions, while the 2007 FAIR and 2009 CIM only proposed including direct emissions. In addition, although the European Parliament and the Council urged the Commission to consider an export rebate in the mechanism, as is also recommended in the 2007 FAIR proposal, the debate continues regarding the issue. Thus, it is not certain whether the Commission will include export allowance adjustment measures in the CBT mechanism or not.

4.4. *The California ETS*

Finally, it is important to examine the California ETS as it includes a form of carbon border adjustment in its electricity sector, which is currently the only carbon border measure in place around the world.⁶⁵ The CBT's Inception Impact Assessment report also recommended taking into consideration the data from the California ETS.⁶⁶ Thus, lessons can be learned from the development and the functioning of the California ETS to build a more effective EU carbon border mechanism.

The California ETS was introduced in 2013 under the supervision of the California Air Resources Board (CARB), building on lessons learnt from the EU ETS and America's 2005 Regional Greenhouse Gas Initiative (RGGI).⁶⁷ As with the EU ETS, the California ETS operates under the cap-and-trade principle, with the total GHG emission cap set to fall 3% each year between 2015 and 2020, and 5% each year between 2021 and 2030. It also allocates free allowances and holds auctions each year. However, the California ETS programme only includes entities that emit more than 25,000 metric tons of CO₂e per year.

Under the Western Interconnection system, the California ETS is linked to Quebec's ETS programme, sharing emission allowances. Currently, the California ETS covers around 85% of the state's GHG emissions, with a goal of reducing GHG emissions by 40% by 2030 and 80% by 2050, compared to 1990 levels. The electricity sector within the programme is scheduled to achieve the goal of being 100% carbon-free by 2045.

The electricity sector of the California ETS is operated under the principle of the First Deliverer of Electricity, which includes both in-state electricity generators and importers in California.⁶⁸ This means that the carbon border measure of the California ETS is operated in a form of extending the ETS to include electricity imports. As it regulates the first deliverers of electricity, the participants of the ETS

⁶⁵ Chi-Keung Woo, *et al.*, "Electricity price behavior and carbon trading: new evidence from California", *Applied Energy*, vol. 204 (2017): 531-543.

⁶⁶ European Commission, "The European Green Deal – Inception impact assessment", Ref. Ares(2020)1350037, 04/03/2020.

⁶⁷ Stefan U. Pauer, "Including electricity imports in California's cap-and-trade program: a case study of a border carbon adjustment in practice", *The Electricity Journal*, vol. 31, no. 10 (2018): 39-45.

⁶⁸ This means the owner, the operator or the importer of an electricity generating facility in California. In the context of electricity imports, it refers to entities that bring the power into the California electricity grid.

See California Energy Commission, "Total System Electric Generation", Sacramento, CA, 2019.

are all registered entities inside California. They operate in the same way of receiving free allowances and purchasing auctions as the in-state electricity generators do. According to the California Energy Commission, California imported 28% of its total electricity generation in 2019. This high level of imports shows the importance and necessity of including the electricity imports into the programme, or it faces risks of carbon leakages within the sector.

The biggest challenge that the California ETS faced during the implementation of the programme was ‘resource shuffling’. This is a common technique that was used by Californian entities to reduce their emission compliance obligation, especially in the electricity sector. As not all out-of-state electricity facilities are covered by the system, resource shuffling happens when entities covered by the ETS buy low carbon versions of electricity, while entities not covered by the ETS buy high carbon versions of electricity. Under the resource shuffling arrangement, the emissions covered under the California ETS may appear to be falling, but, overall, total emissions stayed the same or even increased.

CARB (2020) defined resource shuffling as any arrangement to obtain credit based on alleged emission reductions that have not actually occurred. It also recognised three different ways in which resource shuffling can occur. Firstly, ‘facility swapping’ is where a Californian utility provider replaces its out-of-state electricity supplier with a more GHG-efficient supplier. Secondly, ‘laundering’ is where a Californian utility provider re-labels its electricity imported from a high-emission supplier as unspecified electricity (ICAP, 2021).⁶⁹ Thirdly, ‘cherry picking’ is where a Californian utility replaces its unspecified electricity with a more GHG-efficient source.

A common example of resource shuffling is presented in Figure 6. Under this arrangement, a Californian utility replaced its high-emission supplier with a more GHG-efficient one in Utah, avoiding buying emission allowances in the ETS programme. As California and Oregon are using clean energy, Utah is left with no clean energy and hence must burn more coal to meet its in-state demand. Although emissions covered under the California ETS have fallen, emissions in Utah have increased. Overall, emissions were not reduced and the purpose of the ETS regulation was not achieved. In summary, resource shuffling is a way of avoiding the ETS’s compliance obligation, and it is a central factor that causes California’s carbon leakage. It has significantly reduced the efficiency of the border measure, as resource shuffling could very likely be the major source of emission reduction that was recorded under the California ETS programme.⁷⁰

⁶⁹ Unspecified electricity refers to electricity that was not traceable. Although such electricity is covered by California ETS, a lower default value was set by CARB as an emission factor.

⁷⁰ Severin Borenstein, *et al.*, “Expecting the unexpected: emissions uncertainty and environmental market design”, *American Economic Review*, vol. 109, no. 11 (2019): 3953-3977.

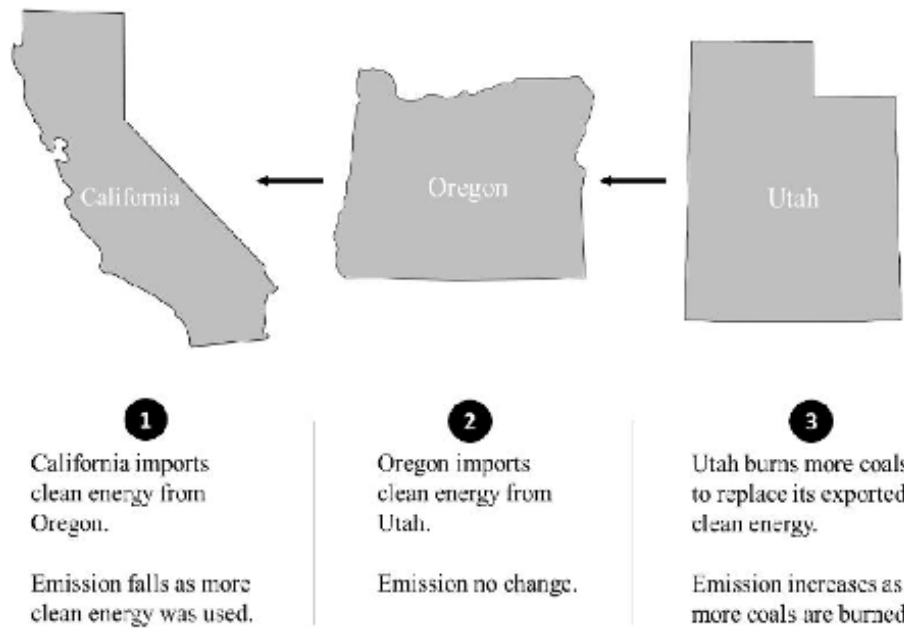


Figure 7: Example of Resource Shuffling in California ETS
Source: Sierra

5. Carbon leakage problem and the Carbon Border Adjustment Mechanism (CBAM) solution

The ambitions for emission reduction raise concerns about potential carbon leakage. The regulation of greenhouse gas emissions may have a significant competitive and financial impact on businesses. As more than 70% of the EU ETS participating companies factor the cost of carbon into their investment decisions, this leads to emission reductions. However, it also leads to carbon leakage.⁷¹ Carbon ‘leakage’ occurs when efforts to control emissions in one place cause producers to shift their productions to a location with less stringent regulations. From a market perspective, it is the largest market failure. As operating under the EU’s climate regulation is much more expensive, companies are ‘forced’ to move operations outside the EU to reduce their production costs.⁷² This renders unjustified trade advantage to countries with no or few emission restrictions. Overall, carbon leakage significantly hinders countries’ efforts to combat climate change. In particular, under the global free flow of trade, consumers would be encouraged to purchase goods produced from jurisdictions with low climate ambitions subjected to lower costs. Alternatively, producers in high ambition jurisdictions may elect to move parts or all of their production to locations with cheaper emission regulations.⁷³

The consequence is that carbon leakage reduces the efficiency of carbon reduction measures in high ambition jurisdictions. In an extreme situation, this could lead to an overall increase of emissions if production was actually increased

⁷¹ Panagiotis Fragkos, Kostas Fragkiadakis and Leonidas Paroussos, “Reducing the decarbonisation cost burden for EU energy-intensive industries”, *Energies*, vol. 14, no. 1 (2021): 236.

⁷² World Bank Group, *Carbon Leakage: Theory, Evidence and Policy Design. Partnership for Market Readiness Technical Papers* (Washington, DC: World Bank, 2015).

⁷³ Shaozeng Zhang, “From externality in economics to leakage in carbon markets: an anthropological approach to market making”, *Economic Anthropology*, vol. 4, no. 1 (2017): 132-143.

in the new location due to lower costs and increased consumer demand, compared to the original location with high ambition standards. It may also lead to job losses and a lack of competitiveness in affected industries in the high ambition locations. Thus, policymakers recognised that unilateral emission regulations are insufficient in resolving a global problem, for which internationally cooperated efforts are needed to achieve the ultimate 2050 carbon-neutral target.⁷⁴

5.1 CBAM

Due to the need to address carbon leakage, the European Commission proposed a CBAM in December 2019. This kind of measure has never been implemented on a worldwide level, and the only local example is the California emissions trading system. The aim of the CBAM is to reinforce and adjust the climate policy between different countries, especially those where the environmental concerns are weaker. The EU plays an important role in setting political standards or, using the words of one scholar, “the EU has a unique power to influence global corporation, countries and set the rules of the game in the market, although it is playing alone” – this was called the Brussels effect.⁷⁵ Moreover, the EU is indirectly imposing rules and measures on the rest of the world. Countries will need to adjust their economy and legal system to the minimum standards developed by the EU and thereby by coercion the rules are transplanted and spread. The CBAM is one of those measures a unilateral measure put forward by the EU to address and put pressure on solving climate change problems, carbon leakage and developing countries’ behaviour. Third countries will adjust their policy according to the EU standards. Therefore, the EU will put a price on certain important products that reflect the emissions caused by developing countries, therefore affecting their own market and economy. Or, using the words of another author, the EU has the power to be a global regulator, extending its territory and enforcing EU climate change policy regardless of the problems that developing countries will face.⁷⁶ Nevertheless, developing countries will also pay a price for this mechanism, depending on their export structure and carbon production intensity.⁷⁷

The CBAM intends to impose an additional charge on EU imports based on their emission content if they were subject to lower or no carbon pricing in their home countries. This mechanism is important along with all the specific actions foreseen in the EU Green Deal Communication, where the EU has set ambitious goals.⁷⁸

Outside the EU, however, countries do not necessarily share the same climate ambitions, especially since each country can determine its own national climate target under the Paris Agreement, which has led to a big difference in carbon prices

⁷⁴ Alessandro Antimiani, *et al.*, “Assessing alternative solutions to carbon leakage”, *Energy Economics*, vol. 36 (2013): 299-311.

⁷⁵ Anu Bradford, *The Brussels Effect: How the European Union Rules the World* (New York, 2020; online edn, Oxford Academic, 2019).

⁷⁶ Joanne Scott, “Extraterritoriality and territorial extension in EU law”, *American Journal of Comparative Law*, vol. 62, no. 1 (2014): 87-125.

⁷⁷ United Nations Conference on Trade and Development (UNCTAD), “EU should consider trade impacts of new climate change mechanism”, 14 July 2021.

⁷⁸ European Commission, Directorate-General for Communication, Ursula Von Der Leyen, “A Union that strives for more: my agenda for Europe: political guidelines for the next European Commission 2019-2024”.

under different legislations. For example, while Sweden has a carbon tax price of 98 EUR/tCO_{2e}, Ukraine, Mexico and Poland's carbon tax prices are all less than 0.83 EUR/tCO_{2e}.⁷⁹ This regulatory divergence amplifies the risk of carbon leakage between European and foreign markets. This phenomenon risks undermining the effectiveness of European emissions-reduction efforts, where European producers pay a higher price for their emissions under the EU Emissions Trading System (ETS) and are unfairly disadvantaged when competing with foreign producers who are not subject to the same costs.⁸⁰ The CBAM aims, therefore, to reduce the risk of carbon leakage and create a level playing field inside the European market, between domestic and foreign producers.

The ultimate goal of the CBAM is to address the problem of carbon leakage while ensuring comparable carbon pricing between imports and locally produced goods. This could come in a few different forms and four distinct options were included in the consultation process: i) a tax on imports (it was also referred to as a CBT, and most likely would be imposed through the tariff system), ii) importers being incorporated within the existing ETS, iii) a mechanism based on the ETS but establishing a separate allowance pool for importers, and iv) a new excise-style tax levied on both the EU products and imports, based on the average carbon intensity of certain products (also referred to as a Carbon Excise Tax).

Upon the completion of the consultation process, the Commission issued a report summarising key responses from the general public, which includes EU and non-EU citizens, businesses and organisations, and public authorities from 45 countries around the world.⁸¹ Regarding the nature of the CBAM, the report illustrates that most respondents believe a border tax or custom duty is the most appropriate design option. Importantly, most respondents agree that the current EU ETS is insufficient in addressing carbon leakage problems. And they believe that the proposed CBAM has the potential to address carbon leakage, to foster an environment where low carbon products are preferred by consumers, and to encourage the development of clean technologies and more ambitious climate policies around the world. Most importantly, they believe that the measure would deliver positive environmental impacts with emissions being reduced globally.

5.1.1 The analysis of the Proposal for a Regulation of the European Parliament and the Council

On the 14th of July 2021, the European Commission published a proposal for the EU CBAM, signalling the official beginning of the policy's legislative procedures. After long discussions involving private and public stakeholders, the Commission has put together a robust and feasible proposal for the CBAM regulation. It aims to transform a system in which carbon leakage is exclusively addressed by free allowances, to a system in which carbon leakage with respect to imports is addressed by a CBAM. As explicitly mentioned in Article 1 of the Proposal, the CBAM will “*progressively become an alternative to the existing EU ETS to imports into the EU and prevent*

⁷⁹ World Bank Group, *World Bank Group Climate Change Action Plan 2021-2025: Supporting Green, Resilient, and Inclusive Development* (Washington, DC: World Bank, 2021).

⁸⁰ Michael Mehling, “What a European carbon border tax might look like?”, *VOX EU CEPR*, 2019, accessed October 15, 2022, <https://voxeu.org/article/what-european-carbon-border-tax-might-look>.

⁸¹ European Commission, “Proposal for a regulation of the European parliament and of the Council establishing a carbon border adjustment mechanism”, COM(2021) 564 final, Brussels, 14.7.2021.

carbon leakage". This is supported by a few references to Directive 2003/87/EC, which administers the implementation of the EU ETS, in the text of the Proposal, including the definition of terms used.

To sum up, this mechanism obliges EU importers to provide credible emissions data on their imports, and therefore to buy the CBAM certificate corresponding to the emissions embedded.

The criterion used to establish the CBAM certificate prices is based on the weekly average auction prices of the EU ETS's allowances.

In March 2022, the Council agreed on a CBAM general approach. On the 8th of June 2022, the package was submitted to the European Parliament, which rejected the reform of the EU emission trading system which set the EU domestic carbon price. On the 22nd of June 2022, the 'Fit for 55' climate package passed. At this stage, the final text is unclear but several changes emerged from the voting.

Initially, the CBAM proposal did not include export rebates for the EU industry; therefore, a tariff was design. The Parliament version added rebates for sectors dependent on export: the export mechanism and also expanded the scope to other sectors and this could have an impact in developing countries that do not have a carbon tax.

6. Conclusion

At the 25th Conference of the Parties (COP 25), more than half of the world's nations pledged to become carbon-neutral by 2050. However, differences have emerged as commitment varies between rich, developed countries and poorer, developing ones. Although environmental policies in some places have achieved their purposes domestically, carbon leakage has led to an increase in emissions in other places with less stringent climate policies. Thus, carbon leakage hinders the effectiveness of governments' unilateral climate policies. The introduction of the EU CBAM is, theoretically, an indispensable tool to combat this issue. Therefore, on the 14th of July 2021, the Commission published its official proposal for establishing the EU CBAM, together with another 12 legislative proposals under the 'Fit for 55' package. Under the proposal, the policy will be designed in compliance with international rules. The system will be implemented with EU importers having to purchase CBAM certificates, the price of which would reflect the carbon price that they have paid.

The aim of the CBAM measure is to reinforce and adjust climate policies between different countries, especially in countries less worried about the environment. The EU plays an important role in setting the political standards. As mentioned, this policy diffusion by coercion due to the economic impact that the Single Market add will lead to the spread of new mechanism and rules across the world. The CBAM is a unilateral measure put forward by the EU to address and apply pressure to solve climate change problems, carbon leakage and developing countries' behaviour, as it will put a price on certain imported products that reflect the emissions caused by developing countries, affecting their own markets and economies. Or, in the words of another author, the EU has a global regulatory power extending its territorial (power) and enforcing EU climate change policy regardless of the problems that third countries will face. Nevertheless, developing countries will also pay a price for this mechanism, depending on their export structure and carbon production intensity. Furthermore, lessons can be learned

from the success of the EU ETS and California's border adjustment measure in the electricity sector. For example, the importance of preventing resource shuffling in the EU CBT is highlighted due to the experience of the Californian ETS.

The EU is changing the rules of the game for fighting climate change, or at least is trying to do so, and becoming a leader on the international scene. However, there is not a theory of everything; only the future will tell if this European measure is a success or not.