Forum: Environmental Commission (EC)

Issue: Regulating the Global Carbon Market to Promote Sustainable Development

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Position: Deputy President

Personal Introduction

Dear Delegates,

My name is Myrto Giarleli and I am a first year IGCSE student at Byron College- British International School. This year, I have the utmost honour of serving as the Deputy President of the Environmental Commission (EC). This will be my first time attending ACGMUN, my first time chairing and my seventh overall conference.

To begin, I would like to wholeheartedly congratulate all of you for taking part in this year's ACGMUN. Furthermore, I am truly grateful that you have selected to take part in the Environmental Commission (EC). I hope that during the conference we will get acquainted while also preparing resolutions, having heated debates and of course- having fun! This particular guide is in regard to the first topic of this committee being "Regulating the Global Carbon Market to Promote Sustainable Development", which should equip you with all the fundamental information on the matter. However, I advise and fully encourage you to conduct research of your own so as to get a better and more thorough understanding of the topic. Also please note that the bibliography can be helpful since it indicates the sources where you can get more information from. Should you have any questions about the topic, committee, or conference in general, do not hesitate to contact me via email at giarlelimyrto@gmail.com I truly look forward to meeting you all this February!

Best regards,
Myrto Giarleli.

Topic Introduction

Today it has become crucial to control and monitor Global Carbon Emissions and for that reason, a carbon market has been created. The carbon market is designed to assist companies and countries trade carbon credits to reduce their emissions globally. There are two types of carbon markets. The first type is called a compliance market and it is set by governments and companies must stay under a certain carbon emission limit. A Voluntary Carbon Market is when companies or individuals buy carbon credits to offset their emissions. These markets inspire smaller organizations to become more environmentally friendly.

However, many companies exploit the system by presenting themselves as environmentally responsible, while not actually reducing their emissions. As a result truly 'green' Non Governmental Organizations (NGOs) are undermined[1], as credits are often bought from inexpensive, low-quality projects that do not result in meaningful carbon removal. These misleading claims of "carbon action"[2] are then presented to governments. Climate data can be misled by claims of "climate action" that are presented to governments, distorting climate data and weakening the system as a whole, which can discourage NGOs from continued participation.

Global Carbon emissions are not falling as they should, mainly as a consequence of the simplicity in which one can fake reductions - this can be done through weak or unverified credits. This as a whole has global effects being that climate change worsening, seen as what is claimed as "being done" to handle it isn't actually happening. Additionally, the trust in the climate system decreases as, in practice, it often exists more as just a concept and isn't truly implemented and effectively enforced in the system. Lastly, big polluters are avoiding real decarbonization and consequences.

The global carbon market reform is significant in an attempt to construct a low-carbon and credible future in global climate action. The global carbon market may risk promoting delays in reducing greenhouse gas emissions rather than driving meaningful action. Therefore, restoring credibility, ensuring that carbon units lead to real emission reductions, and maintaining transparency are essential to prevent greenwashing in te global carbon marketplace.. The international community participating in this conference must consider how the global carbon marketplace is governed to ensure equity, prevent greenwashing, and promote sustainable development. If we don't fix the carbon market now, we are shaping a future built on false climate action.

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[1] Lakhani, Nina. "Corporations Invested in Carbon Offsets That Were "Likely Junk", Analysis Says." *The Guardian*, 30 May 2024, www.theguardian.com/environment/article/2024/may/30/corporate-carbon-offsets-credits. Accessed 15 Jan. 2026.
[2] "Carbon Action." *Carbon Action*, 2021, www.carbonaction.co.nz/. Accessed 15 Jan. 2026.

Definition of Key Terms

Carbon Market[3]

Carbon markets are defined as "trading systems in which carbon credits are sold and bought. Companies or individuals can use carbon markets to compensate for their greenhouse gas emissions by purchasing carbon credits from entities that remove or reduce greenhouse gas emissions."

Compliance Carbon Market[4]

"This is a type of carbon market that focuses on obligatory emissions targets. For example, countries or companies will purchase a certain number of carbon credits or emissions allowances to comply with a nationally or internationally mandated climate target."

Voluntary Carbon Market (VCM)[5]

"The VCM gives companies, non-profit organizations, governments, and individuals the opportunity to buy and sell carbon offset credits."

Net Zero

[6] "Net zero refers to a state in which the greenhouse gases going into the atmosphere are balanced by removal out of the atmosphere."

Carbon Credit[7]

"Carbon credits are the currency of carbon offset markets. A carbon credit unit is supposed to represent a tonne of carbon dioxide or other greenhouse gases reduced or removed."

Cap-and-Trade[8]

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[3]UNDP. "What Are Carbon Markets and Why Are They Important?" *UNDP Climate Promise*, 18 May 2022, climatepromise.undp.org/news-and-stories/what-are-carbon-markets-and-why-are-they-important. Accessed 4 Dec. 2025.
[4]"Compliance Carbon Market - Carbon Market Watch." *Carbon Market Watch*, 3 Sept. 2025, carbonmarketwatch.org/glossary/compliance-carbon-market/. Accessed 5 Dec. 2025.
[5] CarbonCredits.com. "What Is the Voluntary Carbon Market?" *Carbon Credits*, 16 Feb. 2022, carboncredits.com/what-is-the-voluntary-carbon-market/. Accessed 5 Dec. 2025.
[6] Net Zero Climate. "What Is Net Zero?" *Net Zero Climate*, University of Oxford, 2024, netzeroclimate.org/what-is-net-zero-2/. Accessed 5 Feb. 2026.
[7] "Carbon Credit - Carbon Market Watch." *Carbon Market Watch*, 9 Oct. 2025, carbonmarketwatch.org/glossary/carbon-credit/. Accessed 4 Dec. 2025.
[8] "Cap-And-Trade Programme." *Unfccc.int*, 2023, unfccc.int/policy/cap-and-trade-programme. Accessed 4 Dec. 2025.

The "Cap-and-Trade" system is a "permit system for GHG emissions. It sets a limit (the cap) on the GHG emissions that can be emitted. Entities covered by the ETS need to hold one emission unit (allowance) for each tonne of GHG emitted, but entities have the flexibility of selling and buying emission units. The total number of emission units reflects the size of the cap in the ETS." In other words it is a system where a government sets a limit (cap) on emissions and companies can trade allowances under that "cap".

Carbon Offset[9]

"Carbon offsets are mechanisms through which buyers fund efforts that remove or avoid greenhouse gas (GHG) emissions in one place to "offset" GHG emissions elsewhere on Earth. They help corporations compensate for their carbon footprints and meet their environmental objectives." That basically means that there is a reduction of emissions made in one place that is used to "compensate" for emissions somewhere else.

Emissions Trading System (ETS)[10]

"The transfer of CO2 emissions from one country to another when, due to strict climate policies, companies relocate their production to countries with weaker emission constraints. This can contribute to an increase in global greenhouse gas emissions": to simplify, basically a national or regional carbon market; the EU ETS being the largest example.

Carbon Leakage[11]

When companies move production to countries with weaker climate rules, increasing global emissions- "Transfer of CO2 emissions from one country to another when, due to strict climate policies, companies relocate their production to countries with weaker emission constraints. This can contribute to an increase in global greenhouse gas emissions."

Sustainable Development[12]

[9] IBM Envizi. "Carbon Offsets." *Ibm.com*, 14 Oct. 2024, www.ibm.com/think/topics/carbon-offsets. Accessed 4 Dec. 2025.
[10] "Carbon Leakage." *Climate Action*, 2021, climate.ec.europa.eu/eu-action/carbon-markets/eu-emissions-trading-system-eu-ets/free-allocation/carbon-leakage_en. Accessed 20 Jan. 2026.
[11] "Carbon Leakage." *Climate Action*, 2021, climate.ec.europa.eu/eu-action/carbon-markets/eu-emissions-trading-system-eu-ets/free-allocation/carbon-leakage_en. Accessed 4 Dec. 2025.
[12] Centre, UNESCO World Heritage. "Sustainable Development - Glossary." *UNESCO World Heritage Centre*, 1992, whc.unesco.org/en/glossary/375. Accessed 15 Dec. 2025.

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs"

Greenwashing[13]

When companies or countries misuse carbon credits to appear environmentally friendly without real emission cuts; "behaviour or activities that make people believe that a company is doing more to protect the environment than it really is."

Background Information

Scientific Evidence and Impacts of Climate Change

Since the early 1990s, there has been a 65% global carbon increase[14], with greenhouse gasses increasing rapidly- highlighting the urgency to address climate change. Industrial development, population increase, and elevated energy consumption have all played an influential role to a significant rise in carbon emissions globally.

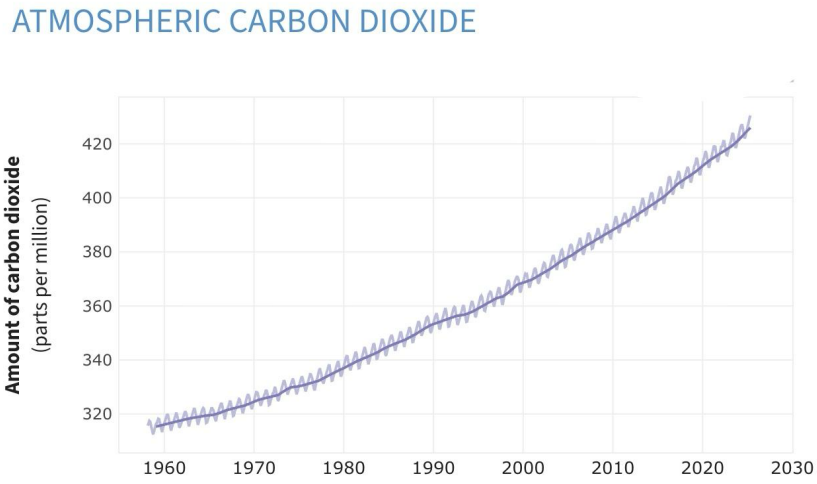
Carbon dioxide concentration in the atmosphere has risen from approximately 355 parts per million (ppm) in 1990 to over 420 ppm today, the highest level recorded in at least 800,000 years.[15] Average global temperatures have already increased by approximately 1.1°C in comparison to pre-industrial levels, with the past decade being the most warm on record. These changes can be and have been directly linked to human-driven emissions, specifically coming from energy production, transportation, and industrial activity.

The effects of rising carbon emissions are getting increasingly increasingly measurable. For example, sea levels have risen since 1900 mostly because of melting glaciers and thermal expansion of seawater. Extreme weather events such as heatwaves, droughts, floods, and wildfires have increased in frequency and intensity, affecting food production, water availability, and economic stability

Rise of Global Gas Emissions:

[13] Cambridge Dictionary. "Greenwashing." *Cambridge Dictionary*, 27 Nov. 2019, dictionary.cambridge.org/dictionary/english/greenwashing. Accessed 4 Dec. 2025.
[14] "Global CO2 Emissions by Year 1940-2025| Statista." *Statista*, 2025, www.statista.com/statistics/276629/global-co2-emissions/?srsltid=AfmBOoqbKHHU2HSR9OYqG_jLuI2nn5TrO0oxR2xZdmo1AlniO1sE1iyF. Accessed 5 Dec. 2025.
[15] Lindsey, Rebecca. "Climate Change: Atmospheric Carbon Dioxide." Climate.gov, National Oceanic and Atmospheric Administration, 21 May 2025, www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide. Accessed 22 Dec. 2025.

Given the increase in global gas emissions since 1990, a consistent trend is evident; Global Gas Emissions rising steadily and systematically, which shows that society faces a long term problem rather than just a short term rise. Additionally, because there is a rapid population growth, it is inevitable that people will need to use means of [16]transport that currently either rely solely on fossil fuels or are "green" yet extremely expensive- meaning that the average citizen can't afford it. Also most of cities' energy consumption as a whole rely on fossil fuels (fossil fuels are non renewable energy meaning that once we consume it all, there will be none left), and as there has also been a boost in industrial jobs it is expected that there will be a larger consumption of energy. Companies are profit maximisers[17] (mostly care about their own benefit) the fact that they wish to use the cheapest means of energy is not surprising. Additionally, due to the fact that there is an economic growth globally, there has been an increase in demand for production of materialistic items that do not fall under the category of a need (a need would be classified as something exclusively necessary for a person's survival). Lastly globalisation and the increase in trade lead to and increase in global carbon emissions.



Evolution of International Climate Action:

In 1979 the First World Climate Conference recognized climate change as a serious issue and called for nations to prevent man-made climate alterations. There are Intergovernmental Panel on Climate Change (IPCC) reports that state that humans are the primary cause of the rise in Green House Gas (GHG) emissions.[18] In 1992 the first international framework was created- the United Nations Framework Convention on Climate Change (UNFCCC[19]) which called for international cooperation to

[16] "Climate Change: Atmospheric Carbon Dioxide." *Climate.gov*, National Oceanic and Atmospheric Administration, 21 May 2025, www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide. Accessed 15 Jan. 2026.
[17] Orgil, Eyal. "Profit Maximization." *DealHub*, 3 Nov. 2024, dealhub.io/glossary/profit-maximization/. Accessed 24 Jan. 2026.
[18] IPCC. "Chapter 3: Human Influence on the Climate System." *Ipcc.ch*, IPCC, 2021, www.ipcc.ch/report/ar6/wg1/chapter/chapter-3/. Accessed 31 Dec. 2025.
[19] United Nations. "UNFCCC." *Unfccc.int*, United Nations, 2023, unfccc.int/. Accessed 31 Dec. 2025.

stabilize GHG emissions. There was an expectation that Economically Developed Nations were expected to take measures first, at a more rapid speed as they had the resources and the economic stability to do so. That way, each nation had responsibilities but they were different- taking into consideration a multitude of factors.

Economic Impact of Climate Change:

Climate change has significant economic consequences worldwide.Throughout history, there have been a plethora of extreme weather catastrophes, such as storms, floods, droughts and heatwaves that cost hundreds of billions of dollars in losses yearly. These disasters also cause a large amount of damage to infrastructure such as roads, bridges, energy systems, and more. This inevitably further hurts the economy.

Changes in rainfall patterns, droughts and heat stresses lead to less agricultural goods being produced[20], making agricultural goods scarce- hence the rise in price which further destabilizes the market. There is also a high rate of labour productivity loss in sectors like agriculture, construction, and outdoor work due to rising temperatures.

Climate Change as a Global Issue:

Climate change is a global issue not just regional due to the fact that GHG spreads evenly through the atmosphere and then proceeds to stay there- in the atmosphere, from decades to centuries which subsequently leads to making the younger generations responsible for any future consequences that will inevitably occur. At this point in climate change's timeline, no nation is immune to climate change's impacts including the countries that have low emissions.

Apart from those, Climate Change also affects global systems such as, but not limited to food supply chains, trade routes, energy markets while also financial stability as a whole. Additionally, Small Island Developing States (SIDS) and Coastal Nations face the threat of sea level raises while also losing land and property. Less Economically Developed Nations are in even more danger, due to the fact that they don't have the financial capability to pay for damage recovery and adaptation.

[20] "Global Drought Outlook: Impacts and Costs of Droughts." *OECD*, 2025, www.oecd.org/en/publications/2025/06/global-drought-outlook_28488e98/full-report/impacts-and-costs-of-droughts_b407ba90.html. Accessed 24 Jan. 2026.

The Climate Crisis:

Before the Crisis:

Before the Climate Crisis (the point when global emissions kept rising despite the growth of carbon markets and net-zero commitments) in 2022 the EU Emissions Trading System (EU ETS) was still the biggest compliance market, covering over 10,000 power plants and factories.[21]The voluntary carbon market grew fast and was valued at about $2 billion in 2021 and projected to rise to $50 billion by 2030[22]. Around 90% of major companies use offsets in their "net-zero" strategies.[23] This grew accordingly due to the fact that companies saw it as a way to rapidly gain "net zero" without actually reducing offsets. This was quite simple to do due to the fact that there was a lack of strong verification; meaning that many companies found a "loophole". There was also a large amount of policy gaps in each country's legal system

After the crisis:

In 2023, investigations found that over 90% of some rainforest-based credits did *not* actually reduce carbon.[24] Several major corporations, including airlines and fashion brands, were accused of greenwashing through unverifiable offsets. Global emissions reached record high in 2022 and 2023, showing that offsets weren't solving the problem.

This crisis has seriously affected the credibility of voluntary carbon markets as offsets were displayed as weakly regulated and not trustworthy which makes it simple and effortless for companies to take environmental responsibility without actual impact. This additionally results in loss of public trust in corporate "net zero" pledges- that have declined, while also investors and governments have become more sceptical of sustainability claims. This led to increased urgency for even stricter standards- verification (public and independent) and lastly, a stronger and more

[21] "What Is the EU ETS?" *Zeronorth.com*, 17 July 2023, zeronorth.com/regulations-what-is-the-eu-ets?gad_source=1&gad_campaignid=20759211562&gbraid=0AAAABHdoPByqhCPrrn87mM0t8lM8QbKp&gclid=Cj0KCQiAosrJBhD0ARIsAHebCNpP3QSFW-ukXakZ_NEyk61xPN3NOZmgfhQzH8LJa

[22] Porsborg-Smith, Anders, et al. "The Voluntary Carbon Market Is Thriving." *BCG Global*, 18 Nov. 2022, www.bcg.com/publications/2023/why-the-voluntary-carbon-market-is-thriving. Accessed 24 Jan. 2026.

[23] NewClimate Institute. "Corporate Climate Responsibility Monitor 2023." *NewClimate Institute*, 13 Feb. 2023, newclimate.org/resources/publications/corporate-climate-responsibility-monitor-2023. Accessed 5 Dec. 2025.

[24]-"Revealed: More than 90% of Rainforest Carbon Offsets by Biggest Provider Are Worthless, Analysis Shows." *The Guardian*, 18 Jan. 2023,www.theguardian.com/environment/2023/jan/18/revealed-forest-carbon-offsets-biggest-provider-worthless-verra-aoe. Accessed 1 Feb. 2026.

efficient regulation of carbon markets.[25] As a result, trust in voluntary carbon markets declined, with offsets increasingly seen as unreliable and misleading. This led to reduced reliance on carbon credits and stronger calls for stricter regulation and independent verification.

Major Countries and Organizations Involved

United States of America

The United States of America (USA) is one of the largest carbon emitters worldwide. Over the last couple of years the US has left and rejoined the Paris Agreement. It additionally has regional carbon markets like California, yet no nationwide system while also being a big influence on global climate policy and investment[26]. The lack of a national carbon market is mainly due to internal political divisions and disagreement between federal and state authorities. Additionally, rather than having emission caps, the United States' priority is investment-based climate action that focuses on clean energy subsidies and technological innovation. Internationally, the US plays a crucial role in shaping global carbon markets through climate finance, private-sector investments, while also diplomatic influence.

China

China is the largest carbon emitter worldwide[27] mostly due to their industry and manufacturing. It balances economic growth with climate targets while also launching the world's biggest national carbon market in 2021. Its carbon market is also state control which arguably improves clarity when it comes to legislative issues. This is an important change in policy for China as it has the ability to impact on global emission trends due to the large size of its market. However, at this time, China's carbon market only covers the power generation industry and does not cover most of the industries with high levels of emissions. The carbon market is controlled by the government, so it will have clearer regulations and rules for implementation; however, it also raises some concern about the level of transparency of the information that is reported and the accuracy of those numbers. Due to this fact, it is still uncertain whether or not China's carbon market will achieve significant reductions in emissions; however, it is clear that the Chinese government has put in place strong capacity to implement a carbon market.

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[25] United Nations. "The Climate Crisis – a Race We Can Win." *United Nations*, United Nations, 2019, www.un.org/en/un75/climate-crisis-race-we-can-win. Accessed 1 Feb. 2026.
[26] Ye, Jason. "U.S. State Carbon Pricing Policies | Center for Climate and Energy Solutions." *Center for Climate and Energy Solutions*, 2 Sept. 2019, www.c2es.org/document/us-state-carbon-pricing-policies/. Accessed 1 Feb. 2026.
[27] Zhang, Xiliang, et al. "The Development of China's National Carbon Market: An Overview." *Energy and Climate Management.*, vol. 1, no. 2, 25 Apr. 2025, pp. 9400015–9400015, https://doi.org/10.26599/ecm.2025.9400015.

India

The emission of carbon in India [28]is increasing due to population growth, industrialization, and the energy drive, but per capita levels are well below Economically Developed Nations. India wants equitable climate change policies with a focus on the funding of renewable energy via carbon markets rather than the hard setting of limits on emissions. Currently, India has started to develop a domestic carbon market framework that aims tom encourage emission reductions without in fact imposing strict caps[29]. It powerfully advocates for climate equity while also emphasising low per-capita emissions and the principle of common but differentiated responsibilities. Additionally, India stands in support of carbon markets mainly as a tool to finance renewable energy and sustainable development.

Brazil

Brazil[30] has a huge role when it comes to climate change due to the Amazon rainforest. They sell credits through forest preservation markets. Additionally Brazil faces controversies over accuracy of forest-based credits. Despite the efforts, there are still a significant amount of challenges in ensuring that the credits truly reflect avoided emissions. Poor monitoring, illegal deforestation and weak law enforcement undermines Brazil's carbon market[31]. This makes independent verification and stronger governance essential to maintain transparency and credibility for national and global climate goals.

International Emissions Trading Association (IETA)

The International Emissions Trading Association (IETA) represents companies that take part in carbon trading. It works to make carbon markets more standardised and transparent, helping businesses follow the rules and operate fairly. By promoting common standards and best practices,

[28] "India Notifies Emission Intensity Targets for Nine Sectors under Carbon Credit Trading Scheme." *Icapcarbonaction.com*, 17 Nov. 2025, icapcarbonaction.com/en/news/india-notifies-emission-intensity-targets-nine-sectors-under-carbon-credit-trading-scheme. Accessed 9 Feb. 2026.
[29] Shrivastava, Subham, and Saurabh Trivedi. "India's Carbon Credit Trading Scheme Needs Price Stability." *World Economic Forum*, 10 Nov. 2025, www.weforum.org/stories/2025/11/why-india-s-carbon-market-needs-a-price-stability-mechanism/. Accessed 9 Feb. 2026.
[30] "Brazil Proposes Global Integration of Carbon Markets at COP30." *Cop30.Br*, 2025, cop30.br/en/news-about-cop30/brazil-proposes-global-integration-of-carbon-markets-at-cop30. Accessed 9 Feb. 2026.
[31] "Brazil Establishes Interim Carbon Market Secretariat to Advance Implementation of the National ETS." *Icapcarbonaction.com*, 21 Oct. 2025, icapcarbonaction.com/en/news/brazil-establishes-interim-carbon-market-secretariat-advance-implementation-national-ets. Accessed 9 Feb. 2026.

IETA can improve the credibility and efficiency of carbon markets, though its effectiveness depends on how widely its guidelines are adopted and enforced by both governments and participants.

Intergovernmental Panel on Climate Change (IPCC)

The Intergovernmental Panel on Climate Change (IPCC)[32] produces scientific reports that help guide rules for carbon markets. It does not enforce laws, but its research influences governments and policies around the world. The IPCC additionally provides scientific benchmarks such as carbon budgets and temperature pathways that countries use to design policies and carbon markets. Even though the IPCC can not enforce laws, its reports are highly influential in shaping international negotiations, climate finance and emissions trading schemes.

Blocs Expected

Alliance 1- The alliance supports appropriate governance of carbon markets and believes that strong existing regulation and independent verification of carbon credits and methodologies are crucial to avoiding greenwashing (false claims of sustainability). Most of the non-P5 entities, mainly within the EU, SIDS, and additional MEDCs, are highly vulnerable to the effects of climate change; therefore, they have chosen to rely on credible carbon credits rather than flexible carbon credits, as these are considered more environmentally sound.

Alliance 2- The bloc supports carbon markets that are both voluntary and flexible. It considers them tools for assisting with the growth of an economy while still gradually reducing greenhouse gas emissions. The bloc is made up of both major emitters that are not P5 and P5 members, including the USA, China and India, whose preference is for market-based solutions vs. legally mandated limits and where the two can be reconciled.

Timeline of Events

[32] "IPCC — Intergovernmental Panel on Climate Change." *Ipcc.ch*, IPCC, 2025, www.ipcc.ch/. Accessed 9 Feb. 2026.

Date	Description of Event
11th December 1997	Kyoto Protocol adopted (first international carbon market)[33], meaning that for the first time, emissions could be traded internationally.
1st January 2005	EU ETS was launched (largest compliance market)[34], meaning that the cap and trade system could work on a large scale and set a global model.
12th December 2015	Paris Agreement (COP21) adopted, Article 6 formalized carbon trading rules,[35] enabling state-to-state carbon trading under global climate goals.
16th July 2021	China launches the largest national carbon market[36]- marking a major expansion of carbon markets by bringing the worldwide largest Green House Gas emitter into a national trading system.
2022-2023	Investigations reveal low-quality credits in voluntary markets; record-high emissions reported,[37] leading to the undermining of trust in offsets while also limits of the carbon market were exposed.

Relevant UN Resolutions, Treaties & Events

- **EU ETS Reform (2018 & 2023)**

[33] "The Kyoto Protocol." *Unfccc.int*, 2022, unfccc.int/process-and-meetings/the-kyoto-protocol. Accessed 5 Dec. 2025.
[34] "About the EU ETS." *Climate Action*, 2024, climate.ec.europa.eu/eu-action/carbon-markets/about-eu-ets_en. Accessed 1 Feb. 2026.
[35] "The Paris Agreement." *United Nations Climate Change*, 2025, unfccc.int/process-and-meetings/the-paris-agreement. Accessed 1 Feb. 2026.
[36] 李琳. "China Launches World's Largest Carbon Market." *Www.gov.cn*, 2021, english.www.gov.cn/statecouncil/ministries/202107/17/content_WS60f210bfc6d0df57f98dd212.html. Accessed 1 Feb. 2026.
[37] Trencher, Gregory, et al. "Demand for Low-Quality Offsets by Major Companies Undermines Climate Integrity of the Voluntary Carbon Market." *Nature Communications*, vol. 15, no. 1, 10 Aug. 2024, https://doi.org/10.1038/s41467-024-51151-w.

The EU ETS[38] Reform of 2018 and again of 2023 aimed to reduce greenhouse gas emissions by reducing the number of allowances an individual company would receive; this had the effect of providing much stronger incentives for companies to reduce their emissions. The drawbacks of the EU ETS Reform were due to loophole protections and the surplus of allowances due to over-allocation, which reduced the overall effectiveness of the reform.

- **IETA Guidelines and Certificate**

  The IETA Guidelines and Certificates have established a carbon trading sector to create standards through which people and organizations can conduct transparent transactions when trading carbon credits and provide for transparency in their operation. A major shortcoming of the IETA Guidelines is that there is no penalty for companies/organizations that do not comply. Therefore, a company/organization will always have the option to remain non-compliant with regard to IETA Guidelines.

- **California Cap-and-Trade System**

  California's Cap-and-Trade[39] program and similar programs have been identified as a form of Voluntary National Programs, targeting localized and/or regional scale Emission Reductions, which may serve as a model for state and local implementation of Carbon Markets. A significant shortcoming for Voluntary National Programs is the disjointed and fragmented implementation of these types of programs, due to the absence of a legal authority to govern these Independent Programs, resulting in limited connection(s) between them.

- **UNFCCC Paris Agreement Article 6 (Carbon Market Cooperation)**

  The Paris Agreement's Article 6 provisions provide a framework for countries to cooperate on emissions reductions through Internationally Transferred Mitigation Outcomes (ITMOs) and a new sustainable development mechanism, effectively guiding the development of global carbon markets. The purpose of these rules is to promote transparency and prevent double accountability of emissions while also encouraging parties to decrease their greenhouse gas

[38] "About the EU ETS." *Climate Action*, 2024, climate.ec.europa.eu/eu-action/carbon-markets/about-eu-ets_en. Accessed 9 Feb. 2026.
[39] "Cap-And-Invest Program | California Air Resources Board." *Ca.gov*, 2026, ww2.arb.ca.gov/our-work/programs/cap-and-invest-program. Accessed 9 Feb. 2026.

emissions as well as promote sustainable development. However, the effectiveness of Article 6[40] has been weakened due to the delayed completion of more detailed implementation guidelines and different reporting standards from country to country, with both contributing to the risk that the environmental integrity of the credits that will be traded will be compromised.

Previous Attempts to Solve the Issue

EU ETS Reforms (2018 & 2023):

EU ETS Reforms is the largest carbon compliance market[41]. The updated regulation has undergone periodic revisions over the years to increase the number of credits offered to businesses, providing them with an increased motivation to lower their carbon emissions. Unfortunately, loopholes[42] and an excess inventory of credits have created a lack of success with respect to these changes. Overall, this shows that while the reforms had strong intentions, weaknesses in implementation reduced their overall effectiveness.

IETA Guidelines/Certificates:

Since the whole issue regarding carbon markets has been on the increasing part when it comes to the issues regarding the reduction of carbon emission, it seems that it has been adequately taken care of when it comes to standardization related to all those who are concerned being involved in the carbon markets through the issuance of Guidelines & Certificates in the form of the whole issue being related to the IETA[43], or in other words, the International Emissions Trading Association. Since it tries aiming at ensuring there is uniformity and transparency regarding the emission present in the carbon markets, it seems to be heading towards realizing just the concept through establishing a certain standard regarding reduction in the carbon markets. It seems less practical in terms of it neither being related to statutory requirements regarding the reduction present in the markets.

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[40] Federica Dossi. “Are Article 6 Carbon Market Rules Fit for Purpose? - Carbon Market Watch.” *Carbon Market Watch*, 7 Aug. 2025, carbonmarketwatch.org/2025/08/07/are-article-6-carbon-market-rules-fit-for-purpose/. Accessed 9 Feb. 2026.
[41] “About the EU ETS.” *Climate Action*, 2024, climate.ec.europa.eu/eu-action/carbon-markets/about-eu-ets_en. Accessed 9 Feb. 2026.
[42] Loughran, Jack/|. “EU Accused of Inserting “Loopholes” into Its 2040 Climate Change Plan.” *Engineering and Technology Magazine*, 3 July 2025, eandt.theiet.org/2025/07/03/eu-accused-inserting-loopholes-its-2040-climate-change-plan. Accessed 9 Feb. 2026.
[43] *VCM Guidelines 2.0 GUIDELINES for HIGH INTEGRITY USE of VERIFIED CARBON CREDITS V2.0*. 2025.

Possible Solutions

Worldwide Verification Authority

A worldwide Verification Authority system as the ability to track and verify the authenticity of carbon credits issued worldwide. This proposal would help combat greenwashing by ensuring that carbon credits represent real and measurable emissions reductions. By establishing transparency, while also accountability, such an authority could increase trust in global carbon markets. This would be implemented by national governments by requiring compliance from participating companies and also enforcing disciplinary penalties for non compliance through national legislation. International collaboration would be utilized to enforce this authority, requiring government bodies, corporations and participants in the emerging carbon trading market to utilize uniform and consistent International Verification Standards (IVS) as a means of trading or using carbon credits.

Rigorous Integrity Credit Standards

Rigorous Integrity Credit Standards create stringent requirements for the creation of carbon credits; this will ensure that only high-quality credits are allowed into the market, which also helps in decreasing greenwashing and weak or low-value credits entering the market. Through assurance that credits represent significant and measurable reductions in greenhouse gas emissions, these criteria build confidence in the global carbon trading market; however, the application of very stringent standards for qualifying for credits may create a significant decrease in the amount of available credits and increase the overall cost of using these credits to achieve compliance for many companies and other entities, especially in less developed countries.

Incentives for Actual Emission Reductions

Incentives that reward an individual directly for their environmentally friendly actions, rather than just generating a carbon credit for use by others, can be a factor in determining whether or not they continue an environmentally friendly activity. Incentives may include tax credits or subsidies to companies that invest in a clean technology or energy-efficient process. This solution may go up against short term emission reductions rather than symbolic compliance through offsets. These incentives

would be implemented by governments as a whole and would apply to high emission companies in high emission sectors- including manufacturing, energy and transport.

Support for Less Economically Developed Nations

Supporting the implementation of financial assistance and technical expertise for clean energy systems and verified credits in developing countries can be done in order to allow said developing countries to continue to evolve economically. This would ensure equity over equality, making sure that all nations have the same resources in order to face this global crisis. The support from Economically Developed Nations and international organizations will be effective as long as it meets the demands for sustained funding and sufficient management.

Transparency & Reporting Requirements

Transparency and Reporting Requirements refer to publishing all related credits, trades, and emissions publicly to reduce opportunities for "greenwashing". This guarantees that emissions reductions are real and measurable, improving accountability and trust in carbon markets. Governments, investors, civil society and the public all benefit from access to this information. An effective and practical way for Governments to implement this is to require all Participants in the Carbon Market to provide emission data, credit issuance and trade information as well as to designate a retirement date for their credits in a publicly available Digital Registered System (DRS). All member states should report in a standardized format and regularly get their data verified by independent Third Party Assessing Agencies (TPAA) for accuracy. Governments could have a clearly defined way to penalize misreporting and non-compliance such as financial penalties or exclusion from the Carbon Market.

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