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CARBON CREDITS: A SOLUTION OR A SMOKESCREEN

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ABSTRACT

Carbon credits have gained prominence as a market-driven strategy to combat climate change, playing a key role in curbing greenhouse gas emissions. This paper delves into the complexities of carbon trading analyzing its potential as both an effective solution for mitigating environmental damage and a source of ethical and operational challenges. By exploring the economic foundations of emissions trading, such as the Coase theorem, it traces the development of global carbon markets from the United States Clean Air Act addressing sulfur dioxide emissions to the Kyoto Protocol, the EU Emissions Trading System, and China's National Carbon Market. The paper highlights systemic flaws, including surplus permit allocation, market instability, and exploitation of developing nations. It also examines ethical issues such as treating nature as a tradable commodity, shifting responsibilities, and reinforcing global inequities, while critiquing the tendency to turn penalties for pollution into purchasable allowances. Through an evaluation of these schemes, the study questions whether they effectively reduce emissions or merely offer an illusion of progress. The paper concludes that while emissions trading has certain advantages over direct regulation it falls short in delivering fair and sustainable solutions. It emphasizes the need for stronger oversight, widespread public education, and a shift toward policies that harmonize environmental preservation with economic objectives fostering a more equitable and effective approach to addressing climate change.

INTRODUCTION

The sky has darkened in recent years due solely to the long-term consequences of all the carbon dioxide that has been released into the atmosphere, which has significantly altered our climate. Global warming has been exacerbated by the atmosphere's ongoing build-up of carbon dioxide. Growing awareness of the dangerous concentrations of these greenhouse gases has compelled governments, private organisations, and international organisations like the World Trade Organisation to put in place mechanisms that will aid in lowering the atmospheric concentration of greenhouse gases like carbon dioxide.

Countries production of greenhouse gases is limited by international treaties which also impose limitations on enterprises. To improve the situation tools like carbon offsets and credits were established to incentivise businesses to conduct their operations in a more environmentally responsible manner. One tonne of carbon dioxide or an equivalent quantity of other greenhouse gases can be released into the atmosphere with one carbon credit. While nations below their quotas can sell their remaining carbon credits, those above them must purchase carbon credits for excess emissions. Known as an emission trading system, this credit exchange between companies has promoted carbon trading on a global scale.

The main topic of this essay is cap-and-trade schemes, which some contend are an essential part of the effort to stop "dangerous anthropogenic forcing"[1] and harmful temperature increases.[2] In fact Article 17 of the Kyoto Protocol allowed for the trade of greenhouse gas emissions.[3] Emission trading is supported by many environmentalists' system since it establishes a predetermined emission limit. As a result, emissions can fall with time for example, in line with the idea of "contraction and convergence"[4] The goal of several other comparable measures, such as carbon fees is the same but one drawback of such programs is that they offer no assurance whatsoever those emissions will be kept to a minimum. Around the world, several emission trading schemes for greenhouse gases have been put into place.

[1] United Nations Framework Convention on Climate Change (UNFCCC): 1992, Article 2, text available at http://www.unfccc.int.

[2] We focus on carbon dioxide emissions given their sheer volume and contribution to climate change, but we should note, of course, that carbon dioxide is not the only greenhouse gas.

[3] Cameron Hepburn, 'Carbon trading: a review of the Kyoto mechanisms', Annual Review of Environment and Resources, 32 (2007), 375–393.

[4] Aubrey Meyer, 'Contraction and Convergence: The global solution to climate change' Schumacher Briefing 5, 2000, Foxhole, UK: Green Books Ltd.

The most prominent is the EU Emissions Trading Scheme (EU ETS) which is currently in its third phase (2013-2020) and went into operation on January 1, 2005.[5] Other types of environmental trading schemes existed before cap-and-trade systems were put in place to reduce greenhouse gas emissions. The most well-known is perhaps the sulphur dioxide (SO2) trading program in the United States which is governed by Title IV of the Clean Air Act modifications from 1990 and has effectively and affordably decreased acid rain.[6]

Critiques have surfaced as cap-and-trade schemes to reduce carbon dioxide emissions have been put into place. Climate change sceptics who would rather see no government response to climate change and who believe that cap-and-trade is the most probable policy to pass through the relevant legislatures are the ones who criticise it the most harshly. Arguments that emissions trading is intrinsically unethical are among the more sober critiques. "Making pollution a commodity to be bought and sold removes the moral stigma that is properly associated with it, may undermine the sense of shared responsibility that increased global cooperation requires," according to Michael Sandel, for example[7] Under a cap-and-trade system, commerce can take place between nations (as in the Kyoto Protocol) and (as in the EU ETS, for instance) or even amongst people.

This Paper looks at a number of moral and ethical arguments against carbon trading. It examines and expands upon a general taxonomy of moral justifications for exercising caution when using markets while taking into account its moral virtues. It then uses this taxonomy to evaluate the argument that carb

on trading is immoral. It also looks at the idea that carbon trading can have unfair effects and revisits claims that carbon trading hasn't been successful in lowering emissions thus far. The conclusion makes recommendations for policy consequences.

[5] For an overview of the EU ETS see the special issue of Climate Policy, vol.6 no.1 (2006).

[6] Robert N Stavins, 'What Can We Learn from the Grand Policy Experiment? Lessons from SO2 Allowance Trading'. Journal of Economic Perspectives 12:3 (1998), 69-88.

[7] Michael Sandel 'Should we Buy the Right to Pollute?' in Public Philosophy: Essays on Morality in Politics (Cambridge: Massachusetts: Harvard University Press, 2005), 94 & 95.

1. THE BACKGROUND AND THE THEORETICAL ROOTS OF EMISSION TRADING

The theoretical justification for emission trading as a market driven solution to climate changes and environmental challenges lies in foundational economic theories such as he Coase theorem by Cecil Pigou who advocated for taxing activities that created negative externalities such as pollution and global warming, this idea lays about the basis for financially incentivising environmental responsibility. Another notable economist John H. Dales[8] expanded on this idea in his work "Pollution, Property & Prices" wherein he assigned economic value to pollution as an externality which could be made tradeable by emission permits that could yield an efficient environmental outcome.

The first successful implementation of the emissions and the carbon trading program can be traced back to the Clean Air Act and the Clean Air Amendments (1990) wherein the United States introduced a cap-and-trade for SO2 with the primary objective of tackling the dangers of Sulphur oxide induced acid rains and its undeniable damage to the eco system. The statute created a trading program for major polluting industries under which emission allowances were allocated which could be traded in offset to trade access permits when their emissions fell below the set cap.[9] The success of the USA model for emission trading laid the foundation for the broader implementation of carbon and emission trading programs across the world. the adoption of the carbon trading scheme on the global scale was kickstarted with the landmark Kyoto Agreement of 1997 under the aegis of of the United Nations Framework Convention on Climate Change (UNFCCC). Article 17 of the Kyoto protocol allowed for international emissions trading between countries with significant reduction in their emission surplus with countries struggling with their targets under the protocol.[10]

The Kyoto protocol was instrumental in introduction of two other international tools to facilitate reductions of emissions by trading carbon credits namely, the Clean Development Mechanism (CDM) and the Joint Implementation (JI) scheme which both allowed developed

[8] John H. Dales, Pollution, Property & Prices: An Essay in Policy-Making and Economics, Univ. of Toronto Press (1968).
[9] A. Denny Ellerman et al., *Markets for Clean Air: The U.S. Acid Rain Program*, Cambridge Univ. Press (2000).
[10] *A Global Turn to Greenhouse Gas Emissions Trading? Experiments, Actors, and Diffusion*, 18 Global Envtl. Pol. 1 (2018)

countries to obtain credits by funding green projects in developing countries and helping them meet their emission targets. With the ever-emerging complexities in climate change regulations and models the mechanisms in place for emission trading evolved with time wherein it could be observed that global emission trading schemes were narrowed down and restricted to limited geographical areas. For example, The European Union in 2005 introduced its very own emission trading system known as the European Union Emissions Trading System (EUETS) under which the worlds largest carbon trading market was established which adopted the cap-and-trade model for emissions trading in several vital industries such as aviation and power.

Following the European Union's regulatory model of carbon trading various stakeholders felt the need to move away from a regulatory model to a more free offset model which was inclusive of Voluntary Carbon markets which allowed organisations and individuals to offset their carbon footprint by trading carbon credits, new certification bodies emerged to regulate voluntary emission trading by states and their industrial entities such as the Verified Carbon Standard (VCS) which ensures the integrity of such trading mechanisms. Similar diversifications later emerged in Asia, leading with the establishment of China's National Carbon Market in 2021 which over time has become the largest global trading system for carbon and other allied emissions. Impetus to the Voluntary trading model can also be inferred under various provisions of the historic Paris Agreement of 2015, Article 6.2 and 6.4 allowed for bilateral and multilateral trading of transferred mitigation outcomes between countries in line with Sustainable Development Goals and the Net Zero goals for fuel usage.

The global carbon and emission trading system is not devoid of flaws, the over allocation of permits and tradeable credits has undermined the very purpose of the exercise that is reduction of emissions, various projects such as the clean development projects by developed countries have become tools of exploitation wherein emission reductions are overstated and meaningful contribution to emission reduction is given the back seat ultimately benefiting wealthier nations disproportionality to their contributions. Unpredictability of carbon pricing and the fluctuations in the market is another cause of worry as it leaves large uncertainties to investors which acts

a major deterrence to adoption of carbon trading as a viable economic solution to environmental problems.[11]

3. FIVE ETHICAL ARGUMENTS AGAINST EMISSION TRADING

Numerous arguments are made against carbon trading, and in this part, we offer a broad categorisation of the types of arguments that may be taken into account in order to list the various justifications for opposing carbon trading. Drawing inspiration from Judith Andre's analysis of Michael Wlazer's moral limits of commodification, we offer a categorization of arguments against carbon trading.[12] Andre aims to offer a more thorough classification of the various justifications for believing that particular costs or advantages shouldn't be purchased and sold.[13] Based on the above analysis by Andre, we infer five situations in which trading might be construed to be beneficial or a burden. I) there are products that "cannot be owned by nature."[14] II) there are some items that we believe would be improper to own, even though they are possible to own.[15] When it is impossible to alienate a good or a responsibility, a third situation where a transaction in goods or services presents difficulties occurs.[16] Alongside the first three categories, there are other situations in which it is possible to detach a good or a responsibility, even though we may believe that doing so is wrong.[17] Finally, to the fifth category, According to this fifth category of reasoning some obligations or goods shouldn't be traded for cash.[18]

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[11] Robert N. Stavins, *The Evolution of Market-Based Environmental Policy Instruments*, 19 Envtl. & Resource Econ. 299 (2001).
[12] Michael Walzer Spheres of Justice: A Defence of Pluralism and Equality (Oxford: Basil Blackwell, 1983), 100-103.
[13] Judith Andre 'Blocked Exchanges: A Taxonomy' in Pluralism, Justice, and Equality (Oxford: Oxford University Press, 1995) edited by David Miller and Michael Walzer, 171-196.
[14] Andre 'Blocked Exchanges', 175: cf 175-176.
[15] Andre 'Blocked Exchanges', 176: cf 176-178
[16] Andre 'Blocked Exchanges', 178-179.
[17] Andre 'Blocked Exchanges', 179-180.
[18] For an excellent discussion of arguments against markets in permits 'to pollute' see Robert Goodin 'Selling Environmental Indulgences', Kyklos 47:4 (1994 573-596. For a contrary view and response see Wilfred Beckerman and Joanna Pasek 'The Morality of Market Mechanisms to Control Pollution', World Economy 4:3 (2003), 191-207.

Our perspective is very consistent with the idea that Polluters have a duty to lower emissions, avoid energy wastage, and adopt a thrifty ethic similar to that put forth by David Wiggins in his study.[19] The paper will now examine five anti-market arguments to see if the benefits of emissions supersede the drawbacks.

3.1 OWNING WHAT SHOULD NOT BE OWNED

One argument against emissions trading is, because it entails the ownership of a type of good that although it is conceivable to own, ought not to be owned. Emission trading suggests that people have property rights over nature and its resources by granting a certain nation, business or individual the ability to destroy the environment through the purchase of carbon credits. One could argue that treating nature as private property is undesirable. The argument's main flaw, though, is that emissions trading is not predicated on the idea that people own the atmosphere. Although the right to utilise a natural resource is a component of emissions trading, a "use right" and a "property right" are not the same thing.

With the aid of an example, this may be further explained. Think about a lessee who has an agreement to utilise a specific plot of property that belongs to the lessor. In this case, he or she does not acquire a private property claim over the land. Instead, they have a "use right" which gives them the ability to occupy the land for a predetermined amount of time. Permits for emissions can be interpreted similarly.

While it is true that "ownership rights" over nature are not necessary for emissions trading, using "usage rights" over nature as an excuse is insufficient because usage rights might still be morally objectionable. It is morally impossible to defend certain types of usage rights. The "trading" of licenses is not the only or even the main purpose of this argument. It appears to be more concerned with a system that allots "rights to use the atmosphere" whether or not those rights are exchangeable. The fundamental goal of protecting the environment is undermined by the categorisation of pollutants as a commodity and subsequent trade of such carbon credits, which encourages environmental exploitation. This clarifies the moral unacceptability of these usage rights.

[19] Wiggins 'A Reasonable Frugality' this volume.

For example, the European Union Emissions Trading System (EU ETS) which is among the largest carbon markets globally has been criticized for issuing an excess of permits in its early stages. This over-allocation led to reduced carbon prices diminishing the motivation for companies to cut emissions. Critics contend that such practices transform the atmosphere into an object of financial speculation, undermining its role as a shared global resource.[20]

Moreover, carbon offset initiatives a significant element of many emissions trading systems have faced scrutiny for both ethical and practical shortcomings. A report by Friends of the Earth International documented instances where these projects displaced indigenous populations or caused environmental harm, raising serious concerns about fairness and justice in their implementation.

Categorizing pollution rights as tradable commodities risks normalizing environmental degradation. By allowing entities to "buy their way" out of reducing emissions, the fundamental goal of protecting the environment is weakened. Furthermore, the trading framework may prioritize economic efficiency over ecological sustainability creating a moral hazard where polluters are incentivized to maintain the status quo.[21]

3.2 ALIENATING RESPONSIBLITIES THAT ONE SHOULD PERFORM ONSELF

The foundation of this type of argument is the idea that some products shouldn't be alienated. For example, it is improper to distance oneself from civic duties. People can distance themselves from the obligations that carbon trading entails by using this type of argument.

They shouldn't alienate anyone. Emission trading reduces a nation's efficiency, which leads to global inefficiency. For example, a nation can easily acquire emission credits, detaching itself from its responsibilities even if it complies with its obligations by not exceeding the set emission level. An atmosphere of total inefficiency regarding the country that buys the

[20] Ellerman, D., & Buchner, B. (2007). "The European Union Emissions Trading Scheme: Origins, Allocation, and Early Results." *Review of Environmental Economics and Policy.*
[21] Friends of the Earth International. (2009). "A Dangerous Distraction: Why Offsetting is Failing the Climate and People."

emission credits and the country that sells them will result from this alienation of responsibilities.

The former nation that buys the emission credits transfers its burden using its financial resources (primarily in the case of rich countries). However, in order to profit financially from unused credits, the latter country selling those credits will be sacrificing the expansion of its own economy (primarily in the case of under developed countries). Providing nations with such options will never incentivise them to limit their own emissions and to transfer the cost of reducing their own emissions to another nation. It is possible to argue that even the nations that buy these carbon credits are making a financial sacrifice, but we must recognise that this is not the appropriate kind of sacrifice to make. As a result, it can be said that emission trading causes people to become less accountable.

A report published by Oxfam International in 2018 highlighted significant flaws in carbon offset mechanisms, emphasizing how they are often misused by wealthier nations and corporations to sidestep meaningful emissions reductions. The report noted that these practices disproportionately harm poorer countries, where land and resources are frequently commodified for offset projects, sometimes resulting in the displacement of local communities.[22] Similarly, a study by the World Bank on emissions trading schemes revealed that nations heavily reliant on purchasing carbon credits tend to lag behind in adopting renewable energy and sustainable technologies compared to those prioritizing domestic emission reduction efforts.[23]

3.3 EMISSIONS TRADING AND THE VULNERABILITY

The idea of alienating what should not be alienated lies at the core of the previous discussion. However, this argument shifts focus to nations that sell emission credits, especially those that are underdeveloped and vulnerable, rather than those purchasing them. Emission trading systems, which allow the exchange of greenhouse gas emission credits, often place a disproportionate burden on less developed countries. These nations frequently face significant resource and infrastructure limitations that hinder their progress. As a result, they may turn to

[22] Oxfam International. (2018). "Carbon Offsets: The Inequality of a False Solution."
[23] World Bank. (2020). "State and Trends of Carbon Pricing 2020."

selling carbon credits as a quick way to generate revenue and address pressing economic challenges.

Although this approach might seem advantageous in the short term, it can lead to flawed decisions regarding national priorities, emphasizing immediate financial benefits over sustainable development. Relying on pollution trading risks stalling long-term growth, fostering dependency on external revenue streams instead of promoting internal resilience in both economic and environmental terms. Moreover, selling emission rights can leave these countries vulnerable to exploitation, as wealthier, developed nations often dominate negotiations, imposing terms that disregard the broader developmental and ecological needs of the sellers.

To mitigate such risks, it is vital to restrict the ability of states to sell their emission rights. Limiting this practice can prevent potential abuse of sovereign authority and protect citizen's well-being. Selling a large portion or the entirety of a country's emission rights could jeopardize its population by restricting access to essential environmental resources. Treating certain emission rights as non-transferable is crucial to ensuring their availability for meeting the basic needs and sustainable growth of future generations.

This principle is especially important in cases where the allocation or sale of emission rights is glaringly inequitable. In such scenarios, international intervention may be required to uphold justice and sovereignty. For example, emission rights should be allocated to secure fundamental needs such as access to clean air, water, and energy for all citizens. Without such safeguards developing nations may prioritize short-term fiscal gains, jeopardizing ecological stability and the quality of life for their people. Creating a framework that classifies essential emission rights as non-transferable can empower developing countries to prioritize their long-term development goals without succumbing to external pressures. For instance, emissions necessary to provide essential infrastructure and energy should remain outside the scope of trading systems. This strategy ensures more equitable outcomes in global carbon markets while protecting vulnerable nations from exploitation.

Ultimately, emission trading systems need strong safeguards to shield less developed nations from adverse effects. Recognizing the limitations of treating emission rights as commodities and preserving certain rights as inalienable can support sustainable development while addressing global greenhouse gas emissions. Achieving this balance is crucial to fostering a fair and inclusive international response to climate change.

When emissions trading systems give rise to significant inequities international intervention might be required. Ensuring that emission rights are allocated to meet fundamental necessities such as access to clean air, water, and energy can help prevent these systems from compromising the rights and welfare of vulnerable communities. For example, the Environmental Justice Foundation (EJF) has called for policies that center on the needs of local populations within emissions trading schemes, stressing the critical need to safeguard resources for the benefit of future generations.

3.4 THE IMPLICATIONS OF PUTTING A PRICE ON THE NATURAL WORLD

The value of the natural world is intrinsic and cannot be quantified in monetary terms. Emission trading gives greenhouse emissions a monetary value by exchanging carbon credits for cash. One could argue that emission trading gives carbon dioxide (and other greenhouse gases) a monetary value in addition to enabling people to shirk their obligations. It is possible to view the practice of pricing the natural environment as unacceptable in relation to emissions trading. Since the value of the natural world cannot be expressed in monetary terms, this mindset is actually unsuitable.

Because it has artistic, cultural, ecological, and ethical qualities that are not entirely measurable by economic standards, the natural world has intrinsic value that goes beyond monetary evaluation. By turning pollution rights into tradable carbon credits, emission trading, a market-based strategy to combat climate change aims to give greenhouse gas emissions a monetary value. Critics contend that this method commodifies the environment and reduces its value to a purely transactional figure even as it encourages emission reductions. Emission trading can be seen as allowing people and businesses to “purchase” the right to pollute by putting a price on carbon dioxide and other greenhouse gases potentially avoiding their ethical and environmental obligations.

Instead of emphasising actual decreases in ecological effect, this strategy runs the risk of creating the impression that environmental harm can always be compensated for with adequate financial means. The loss of biodiversity, cultural legacy associated with particular ecosystems, or the psychological and physical benefits that pristine natural landscapes offer are just a few examples of the larger intangible components of environmental degradation that are not taken into consideration by such pricing mechanisms. Critics argue that this way of thinking reduces natural systems to crude economic models and fundamentally misrepresents their intricate interdependencies.

The primary issue with monetising the natural world is that it ignores the boundaries of economic value. Although they are essential to human survival ecosystems and the services they provide such as water filtering, air purification, and climate regulation defy precise financial depiction. By turning these services into tradable commodities, carbon trading runs the risk of promoting unsustainable behaviours like putting immediate financial gain ahead of long-term environmental stability. Furthermore, marginalised communities who frequently suffer the most from environmental degradation are disproportionately affected by this strategy because they lack the financial means to participate in such trading programs. Global inequality is sustained when monetary value is given precedence over moral and egalitarian considerations, undermining the larger moral duty to preserve the environment for coming generations.

Emission trading schemes can result in abuse and loopholes, according to critics. The efficiency of the system in lowering overall emissions may be compromised if businesses take advantage of lax regulatory frameworks to exaggerate the quantity of carbon credits available. This leads to a paradox: although the system's goal is to reduce greenhouse gas emissions it may inadvertently encourage dishonest behaviour that postpones important action. Furthermore, the monetisation of carbon can draw focus away from more sensible strategies like direct regulation or funding renewable energy and green technology. A paradigm change that acknowledges the intrinsic value of the natural world rather than just it's monetary worth is necessary for true environmental management. In order to promote sustainable practices and acknowledge the inherent worth of ecosystems, ethical, cultural, and ecological factors must be integrated into policymaking.

In the end, emission trading has drawbacks even though it might be a useful strategy for reducing climate change. It runs the risk of normalising the commercialisation of nature and undermining the ethical principles that support environmental preservation. A more comprehensive strategy is required, one that recognises the natural environment as an indispensable basis for life and wellbeing rather than merely as a financial resource.

The framework of emissions trading often places an undue burden on marginalized groups, particularly in developing nations. According to a 2018 report by Friends of the Earth International[24] carbon offset initiatives in economically disadvantaged regions have frequently led to the displacement of local communities and deepened existing inequalities. For example, forest conservation projects under the REDD+ program have resulted in land seizures in countries like Kenya and Indonesia, stripping indigenous populations of their traditional ways of life. Meanwhile, affluent corporations have reaped the benefits by using these projects to fulfill their carbon offset requirements.

A significant issue with emissions trading lies in its inability to address the broader ethical and ecological implications of environmental harm. The destruction of ecosystems or the loss of biodiversity often triggers a cascade of effects that extend well beyond the immediate economic costs. Research conducted by the Stockholm Resilience Centre in 2020[25] highlighted how ecosystems function as intricate networks, where disturbances such as deforestation can lead to widespread repercussions, including climate instability and the degradation of essential life-support systems.

3.5 DOES EMISSIONS TRADING CONVERT WHAT OUGHT TO BE A FINE INTO A FEE?

This argument is predicated on the idea that greenhouse gas emissions are wrong and ought to be punished. Conversely, emissions trading allows individuals to pollute more than the allowed amount in exchange for a monetary compensation. It is imperative that one realises that paying a charge should not grant permission to do so. Policies with a deterrent impact must be taken into account while discussing the negative aspects influencing the environment. Sandel effectively conveys the main point in a succinct analysis of carbon trading. “We shouldn’t give

[24] Friends of the Earth International. (2018). "The Impact of Carbon Offsetting on Developing Nations."
[25] Stockholm Resilience Centre. (2020). "Planetary Boundaries and the Interconnected Nature of Ecosystems."

up the distinction between a fine and a fee for despoiling the environment too easily," adds Sandel. Let's say a wealthy hiker chose to pay $100 for the convenience of not having to pay a $100 fee for tossing a beer can into the Grand Canyon. Would it be acceptable for him to handle the fine as though it were just a costly dumping charge? "No," is Sandel's response. Treating the "fine" in this instance as though it where a "fee" would be incorrect.

Likewise, it would be improper for an able-bodied someone to park in a disability parking space with the sole intention of paying the associated fine and considering it a fair price to exchange for the privilege. Sandel then discusses greenhouse gas emissions using this line of reasoning. People should so limit themselves to a predetermined quota and if any attempt is made to go beyond their personal quota, it must be regarded as a crime that carries a fine rather than a choice that they can afford, as would be the case with a fee.

The European Union Emissions Trading System (EU ETS) recognized as one of the largest carbon markets globally has been criticized for enabling businesses to view carbon credits as a routine operational expense rather than a mechanism to discourage pollution. A 2021 report by the European Environment Agency highlighted those industries such as aviation and heavy manufacturing often chose to buy credits instead of implementing significant sustainable initiatives. This practice has been seen as counterproductive, as it detracts from the system's primary objective of reducing emissions and fosters the perception that pollution can be justified through financial expenditure.

4. CASE IN POINT:

The paper will now look into two of the major carbon trading systems with significant global presence namely:

1. European Union Emission Trading System (EU ETS) and
2. The Chinese National Emissions Trading Scheme and a

Analyse the various shortfalls in the operation of these schemes in light of the above presented arguments.

4.1 THE EUROPEAN UNION EMISSIONS TRADING SYSYTEM (EU ETS)

The EU ETS, launched in 2005, is the world's largest and longest-running carbon trading market. It was created as a cap-and-trade system, in which corporations are granted allowances (or permits) to emit a particular amount of greenhouse gases (GHGs), and a limit (or cap) is placed on the overall GHG emissions for specific sectors. Businesses that cut emissions below their allotted levels can sell the extra, while those who go over their limitations are required to buy more licenses or pay fines.[26]

Carbon trading under the European Union Model has not been effective due to multiple reasons such as (1**) Permit Overallocation**; The EU ETS suffered from the overallocation of emission permits in its early stages. Permits for several industries were significantly higher than their actual emissions. Permit prices plummeted as a result of this excess, with carbon trading prices in Phase 1 (2005–2007) occasionally dropping below €5 per tonne. The financial motivation for businesses to invest in greener technologies or embrace more sustainable practices was eliminated by low costs.[27] (2**) Windfall Gains**; Certain industries were able to improperly profit from the free distribution of permits. Power companies in a number of EU member states, for instance, obtained permits for free but added the notional cost of the permits to electricity rates, so taxing customers and making money off of excess permits. This did not result in appreciable carbon reductions and instead distorted market signals. (3) Concerns regarding "**carbon leakage,"** or businesses moving their operations to nations with laxer or non-existent emission restrictions, were frequently voiced by industries that were subject to carbon trading. The EU countered this by giving high-emission industries like steel and cement significant free allowances, which further undermined the incentive to innovate or cut emissions. (4**) Absence of Policies** That Complement Each Other. The system's capacity to achieve significant reductions was constrained by its reliance on market mechanisms like carbon trading in the absence of robust complementing policies, such as investments in

[26] A.D. Ellerman & B. Buchner**,** *The European Union Emissions Trading Scheme: Origins, Allocation, and 2005 Results*, 1 Rev. Envtl. Econ. & Pol'y 66 (2007)
[27] David G. Victor & Richard B. Stewart**,** *Can the European Union's Emissions Trading Scheme Succeed as an International Policy Model?*, Brookings Inst. (2005)

renewable energy or more stringent energy efficiency standards.[28] Systemic emission reduction goals were not given enough priority because of the overemphasis on trade.

4.2 CHINA'S NATIONAL EMISSION TRADING SCHEME (ETS)

China's National ETS, launched in 2021, is the world's largest carbon trading market in terms of emissions covered. The ETS was first aimed at the power generation sector, which accounts for nearly 40% of China's CO_2 emissions.[29] Its goal is to assist the country achieve carbon neutrality by 2060. The method takes an intensity-based approach, limiting emissions per unit of energy output rather than absolute emission ceilings. The Chinese approach to carbon trading being slightly different from the European model suffers from various flaws that has resulted in diminished efficiency to meeting the targets.[30] The scheme has not been effective due to (1) **Absolute Reductions vs. Intensity-Based Goals**; China's ETS places more emphasis on lowering emissions per unit of energy output than cap-and-trade schemes that enforce absolute emission caps. If energy production rises, as has been the case with China's strong economic expansion, this strategy permits total emissions to continue rising. As a result, the ETS is unable to impose a strict limit on total emissions. (2) **Low Costs of Carbon;** The Chinese ETS's carbon costs have been modest in its early stages, averaging about $8 per tonne in 2023. This price is much lower than what is needed to encourage major transitions to cleaner energy sources. For comparison, research indicates that significant emissions reductions in the power sector require a price above $50 per tonne. It is economically rational due to its low prices. (3**) Absence of Strict Monitoring** and Validation Weak monitoring, reporting, and verification (MRV) systems have drawn criticism to China's ETS. The system's trustworthiness is weakened by irregular data collecting and doubts over the veracity of self-reported emissions. It is challenging to enforce compliance or determine the

[28] Stanford Program on Energy and Sustainable Development**,** *The EU's CO2 Emissions Trading Scheme: A Global Prototype?*, Stanford U. (2005)
[29] Jonathan Elkind & Noah Kaufman, *Can China's CO2 Trading System Avoid the Pitfalls of Other Emissions Trading Schemes?*, Center on Global Energy Policy, Columbia Univ. (Feb. 27, 2018)
[30] Zhang et al.**,** *China's Pilot Emissions Trading Schemes: A Comparative Analysis and Lessons Learned*, 75 *Energy Policy* 9 (2014)

true effect of the ETS on emissions in the absence of trustworthy data.[31] (4) **Excessive dependence on free allocations;** China's ETS, the majority of allowances are distributed freely as opposed to through auction. As a result, businesses are under less financial pressure to cut emissions. Free allocations are justified economically as a way to avoid a negative impact on industrial competitiveness, but they also lessen the motivation to invest in and invent cleaner manufacturing techniques.

The difficulties of establishing a successful carbon trading system in a quickly evolving economy are exemplified by China's National ETS. The difficulty of striking a balance between environmental objectives and economic demands is shown in the limited coverage, low carbon pricing, and reliance on intensity-based targets. These design decisions greatly impair the system's capacity to achieve large emission reductions, even while they support economic growth and competitiveness.

5. CONCLUSION

Although the evidence to date points to the effectiveness of greenhouse gas emission trading schemes in lowering emissions, sceptics of climate change have been increasingly critical of them. A taxonomy of ethical objections to this type of trade system was presented in this paper. We have looked at many attempts to demonstrate the unethical nature of carbon trading schemes. We have maintained that emissions trading programs are not dedicated to either “ownership” rights or intolerable “Right to Use” over the atmosphere in its entirety. Later, we contended that in order to safeguard the weak, carbon trading might be restricted.

We also call attention to the questions of who should have the legal authority to emit greenhouse gases and how to best guarantee that the licenses are obtained by the rightful owners. Lastly, we have maintained that the distinction between a “fine” and a “fee" is not eliminated by carbon trading programs. The impact of carbon trading programs on wealth distribution is the first important concern. This leads us to the conclusion that poorer households are likely to be more negatively impacted by emission trading systems than are

[31] Becker (2020), *Comparative Policy Insights from China's Emissions Trading Systems Pilots*, *Environmental Economics Review*.

wealthier households. In terms of economic disparity, such programs now affect the poor more than the wealthy do.

We come to the conclusion that, in contrast to other similar policies like carbon taxes, emissions trading is still a useful instrument for policymakers. Compared to cap-and-trade, carbon taxes offer certain benefits but they are worse in other respects, such as not guaranteeing environmental results. In fact, it seems doubtful that carbon prices would result in the kind of emission reductions required to produce a fair outcome for future generations. Additionally, because it raises compliance costs, creates waste, and limits people's and business's ability to adjust to a low-carbon economy, direct regulation is worse than an emission trading scheme or a carbon tax.

Strict sanctions may be put in place, such as revoking the licenses of businesses, organisations, etc. that consistently above the allowed emission level and are entirely reliant on such an emission trading scheme. In the short term, emission trading schemes may seem like effective tools, but in the long term, we need a different approach that allows us to adapt to a sustainable and healthy environment while considering the interests of future generations. To give our future generations a cleaner and better environment, widespread education is necessary to raise public awareness of the problem.