Forum: ECOSOC

Issue: The necessity of National Carbon Taxes for major polluters, China and USA, to manage the climate crisis.

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Introduction

Global warming, driven by carbon emissions from fossil fuels, poses a global threat. Fossil fuels are highly energy dense, meaning that they require less material to produce higher amounts of energy; furthermore, this source of energy is well-established as it has been the main way to fuel society during the entirety of the development of the modern, industrialized world. Now all our systems—from production to infrastructure to transportation to residential—are set up for fossil fuel use and countries opt to continue to use non-renewable energies as they are more accessible and present a higher economic benefit than other sources.

Rising temperatures have caused drastic changes in the climate, causing major crises around the globe, such as flash floods, stronger tropical storms, and desertification. Less-developed countries and coastal regions are disproportionately more vulnerable to these disasters and less resilient to their impacts because of the differences in their infrastructure, financial and technological resources, and their dependency on agriculture and natural resources, which are highly sensitive to climate fluctuations.

Even though countries have gathered together in the past to try to reduce global greenhouse emissions—for example, the Paris Agreement, adopted in 2016—smaller and less-developed countries seem to be the only ones making notable progress, whereas bigger countries fail to meet requirements and often withdraw from agreements. This is an issue because bigger countries like China and USA are the prominent cause of the global warming crisis as their exponential amount of carbon emissions surpasses smaller and less-developed countries' emissions by thousands of megatons of carbon dioxide ($MtCO_2$), making their input crucial to mitigate climate change and bring down rising global temperatures.

The escalating climate crisis demands immediate and decisive action on the world's largest greenhouse gas emitters, particularly China and the United States. Among the most effective measures is the implementation of national carbon taxes—a mechanism that places a financial cost on carbon emissions, incentivizing major polluters to become more independent from fossil fuels and invest in sustainable technologies. Carbon taxes have two key benefits: they make polluters pay for the environmental harm they cause, encouraging them to take responsibility, and they raise funds that can be used to fight climate change and adapt to its effects. Despite their potential, such policies face political, economic, and social challenges, including concerns about industrial competitiveness and fears of public backlash. Despite these issues, with smart planning and supportive policies, carbon taxes in these countries could play a leading role in addressing the climate crisis.

Definition of Key Terms

Cap and Trade:

Cap and trade is a government regulatory system designed to give companies an incentive to reduce their carbon emissions.

Fossil Fuels:

A fossil fuel is a fuel formed from a natural resource, which can include coal, petroleum, oils, and natural gas. Fossil fuels all contain carbon, and are some of the primary factors that lead to global warming. They are heavily relied upon by most nations around the world.

Greenhouse Gases:

Greenhouse gases are types of gasses that absorb and trap heat within our atmosphere. They are found within fossil fuels. The main types of greenhouse gases are water vapor, carbon dioxide, nitrous oxide, ozone, and methane.

Global Warming:

The process of the Earth getting warmer over extended periods of time. It is largely driven by human emissions of greenhouse gases which cause heat to be trapped within our atmosphere.

Background Information

What is a National Carbon Tax?

A national carbon tax is a policy tool designed to reduce greenhouse gas emissions by placing a direct price on carbon dioxide and other harmful emissions. Carbon pricing is an essential policy tool to decarbonize the world economies. Through various instruments, carbon prices provide economic incentives to make climate-friendly changes in consumption, production and investment.

This pricing aims to incorporate the costs of pollution and climate damage into market prices, incentivising reduced emissions, and driving the adoption of clean energy alternatives across economic sectors. The tax is measured per ton of carbon dioxide (TCO_2) equivalent emissions released and needs to be paid by the burning entity. The core principle behind an effective carbon tax is that it sets a stable, rising price trajectory high enough to drive meaningful emissions reductions and the scaling of clean technologies over time.

Implementation of National Carbon Taxes:

The idea of taxing carbon emissions was conceived in the late 20th century as climate science proved there was a relationship between greenhouse gas emissions and global warming. The first adopters of carbon taxes included Nordic countries like Finland and Sweden, which introduced these policies in the early 1990s to address both environmental concerns and energy efficiency. These pioneering efforts demonstrated that carbon taxes could effectively reduce emissions while maintaining economic growth, inspiring other nations to explore similar measures. Over time, the idea gained recognition globally as a straightforward and economically efficient way to combat climate change.

Since its first implementations, the adoption of carbon taxes has expanded, with over 30 countries now applying for planning such policies. Nations like Canada, the United Kingdom, and Japan have developed sophisticated systems, often combining carbon taxes with other climate initiatives to maximize their effectiveness.

At the same time, regions such as the European Union have combined carbon pricing tools like cap-and-trade with limited carbon taxes to address emissions. However, progress has been uneven, with many high-emission countries, including China and the United States, are running behind in adopting national-level carbon taxes due to political and economic concerns.

The Pros and Cons of National Carbon Taxes:

A carbon tax is a market-based approach designed to reduce greenhouse gases and encourage shifts to cleaner energy sources, energy efficiency, and low-carbon solutions across key sectors like electricity, transportation, and manufacturing. By reducing emissions, it mitigates climate change and aligns with global targets within the Sustainable Development Goals. Funds generated from carbon taxes can fund green initiatives such as renewable energy projects, sustainable infrastructure, and resilience measures or be redistributed through tax cuts or rebates, ensuring fairness and transparency. Additionally, non-profit designs, like Canada's, ensure proceeds are returned to jurisdictions for reinvestment, rebates, or further tax cuts, minimizing concerns over higher taxes or government expansion and public backlash.

On the other hand, while carbon taxes are effective tools for reducing emissions, they face significant challenges such as their regressive nature, as lower-income households bear a greater financial burden due to higher energy costs, though this can be mitigated with exemptions or revenue redistribution. There is also political and public opposition, fueled by influential fossil fuel lobbies and pre-existing consumer culture, which further complicates adoption, with concerns about competitiveness and "carbon leakage" where industries move to regions with weaker policies. Designing effective, adjustable tax systems is also complex, requiring careful calibration to balance economic, environmental and social sustainability. Critics argue that direct investments in renewable energy, electric vehicles, and green infrastructure may deliver faster, more certain emission reductions than relying on this approach alone.

Major Countries and Organisations Involved

EU ETS

The EU Emissions Trading System is the largest multi-sector ETS in the world. It includes 11,000 power stations and industrial plants across the EU and operates in all member states as well as the UK, Norway, Iceland and Liechtenstein. Under the “cap and trade” principle a maximum limit is placed on the right to emit certain pollutants and companies can trade emission allowances within the zone. It has a carbon tax rate per TCO2 of 88.46€.

United Nations Intergovernmental Panel on Climate Change (IPCC)

The IPCC is the United Nations’ main committee and panel on climate change. It was created by the World Meteorological Organization and the United Nations, meant to provide scientific information about climate change. This is crucial because the goal of the IPCC is to then take that information and provide it to policymakers, who have the power to enact changes regarding climate change and sustainable development. The panel has already done work researching the potential to use renewable energy as an energy source. To help us reach net zero carbon emissions in the coming decades, they have strongly recommended clean energy be implemented globally. Although the panel has 195 members, and most of those members draw upon the recommendations of the committee to guide their climate related decisions, there is still work to be done, and other solutions, including the responsibility of the nations themselves, are needed to truly solve this problem.

United States of America

The United States is one of the two countries with the most carbon emissions per year and is therefore at the forefront of this issue. The United States does not have a federal carbon tax; however, many state and federal programs to reduce carbon emissions effectively price carbon—for example, through cap-and-trade systems or regulations. RGGI

is the first mandatory cap-and-trade program in the United States to limit carbon dioxide emissions from the power sector. California's program was the first multi-sector cap-and-trade program in North America. Massachusetts has also implemented regulations to establish an additional cap-and-trade program for its power sector that runs in parallel with RGGI but extends out to 2050. Washington state enacted new cap-and-invest legislation that took effect in 2023. New York is preparing an economy-wide cap-and-invest program that is expected to launch in 2025, either in addition to its RGGI participation or in place of its RGGI participation. And Oregon has started a rulemaking process to reestablish a program that places a declining cap on emissions associated with fossil fuel combustion in the state.

China

China is the world's greatest emitter of fossil fuels, making up 28% of our global emissions. Several challenges present themselves, because a large part of China's economy revolves around fossil fuels. That economy also acts as a base for the global economy, with many nations relying heavily on products produced in China. China first embarked on the effort to test emissions trading as a key means to manage its CO2 emissions in the early 2010s, with pilot programs launched in seven provinces and cities starting in 2013 (Beijing, Tianjin, Shanghai, Chongqing, Hubei, Guangdong, and Shenzhen). Managing and reducing national emissions intensity became the basis for China's mitigation pledges under the global climate mitigation frameworks, starting with the Copenhagen Accord in 2009, where China committed to 40%–45% reduction in CO2 emissions intensity by 2020. Leading up to the Paris Agreement in 2015, China updated its emissions intensity reduction commitment to 60–65 percent by 2030 and announced a fresh pledge to peak emissions by 2030—albeit without specifying its level. The official announcement to implement emissions trading at the national level came in 2017.

India

Similar to the US and China, India is one of the largest emitters of greenhouse gas emissions. In fact, New Delhi, the capital of India, is the world's most polluted city, and India is home to 21 of the world's 30 most polluted cities. That said, India has reduced its carbon emission by over 21% since 2005. India puts excise duty and value added tax on petroleum products which account to 3.3 % of its Gross Domestic Product. A clean energy cess on coal was introduced in 2010, which increased to $4 per TCO_2 in 2016, but has now been replaced by Goods and Services Tax.

Denmark

The Danish parliament has recently approved a new corporate carbon tax which is reported to become the highest in Europe. Denmark has already set an ambitious target of cutting greenhouse gas emissions by 70% from 1990 levels by 2030. The Danish government says it will target companies both in and outside the EU's carbon quota system.

Finland

Finland's greenhouse gas emissions mainly consist of CO2 emissions from energy use (78%). In 2021, these emissions are priced through fuel excise taxes, carbon taxes and the European Union Emissions Trading System (EU ETS). Finland priced about 90% of its carbon emissions from energy use and about 49% were priced at an ECR above EUR 60 per tonne of CO2 (see Figure 3). Emissions priced at this level mainly originated from the road transport, buildings, industry, as well as the agriculture and fisheries sector. The EU ETS covered about 9% of other greenhouse gas emissions, which made up about 22% of national emissions.

Sweden

Sweden was one of the first countries to implement a carbon tax as a way of reducing their CO_2 emissions. The carbon tax was introduced in 1991 at a rate of 25€ per TCO_2 emitted and has gradually been increased to 125€ in 2024, for fuels with 100 % fossil content, for example, natural gas or coal. By increasing the tax gradually and in a stepwise manner, households and businesses have been given time to adapt, which has improved the political practicability of tax increases. Industry covered by the EU ETS is entirely exempt from carbon tax while a lower tax rate initially applied to industry outside the EU ETS. By 2018 the reduced rate for industry outside the EU ETS was phased out.

Timeline of Events

1979 - The World's First Climate Conference	Held in Geneva, this first climate conference introduced climate change as an important issue and called on governments to prevent man from having an impact on the climate.
1987 - The Hottest Year on Record (up to that point)	1987 was the hottest year ever recorded up to that point in time, with the 1980's being the hottest decade on record and holding seven of the eight warmest years up to 1990.
1988 - IPCC Established	The United Nations' Intergovernmental Panel on Climate Change was established, making it the first UN body specific to climate change. It still plays an important role to this day.
1990 - First IPCC Report and Second World Climate Conference	The Intergovernmental Panel on Climate Change (IPCC) made its first report, determining that the planet has warmed by 0.5 degrees over the past century. They warned that measures had to be taken to limit human greenhouse gas emissions to prevent further problems. The Second World Climate Conference took place, and the Alliance of Small Island States (AOSIS) was created to give a voice to developing island states regarding global warming.
1990s - Early Adoption of Carbon Pricing	Northern European countries were the first to adopt carbon pricing in the early 1990s. In 1990 Finland adopted the first carbon tax and one year later in 1991 Sweden also implemented a carbon tax, using it alongside other policies.

1992 - Climate Change Convention	Signed by 154 nations, the convention aimed to reduce emissions in industrialized nations by 2000.
1997 - The Kyoto Protocol	A legally binding treaty to cut carbon emissions by an average of 5.4% by 2010. The United States voiced concerns and asked for "meaningful participation" from developing countries. President George W Bush denounced the protocol, not wanting to risk the American economy. This complex ratification process meant that no treaty was signed until February 16, 2005.
2005 - Kyoto Protocol Comes into Force	Talks also began to surface about future steps to be taken, and it was decided that the second period of protocol would begin in 2012.
2005 - Launch of the EU Emissions Trading System (EU ETS)	The European Union establishes the world's largest cap-and-trade system, influencing global perspectives about carbon pricing mechanisms, including carbon taxes.
2005 - USA's Regional Greenhouse Gas Initiative	The Regional Greenhouse Gas Initiative (RGGI) is a cooperative effort among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont to cap and reduce power sector CO2 emissions.

2007 - The IPCC wins the Nobel Peace Prize and Kyoto Protocol Part Two Discussions	On December 10, 2007 the IPCC, along with American climate activist Al Gore won the Nobel Peace Prize. Later that year in April, the United States Supreme Court ruled that the United States Environmental Protection Agency (EPA) didn't have the authority to regulate carbon emissions. At the UN climate summit in Bali, the United States was publicly booed during talks to agree to a new timetable for the Kyoto Protocol. They eventually decided to join at the last minute.
2009 - Copenhagen Accord	The Copenhagen Accord is a document which delegates at the 15th session of the Conference of Parties (COP 15) to the United Nations Framework Convention on Climate Change agreed to "take note of" at the final plenary on 18 December 2009. China committed to 40–45% reduction in CO2 emissions intensity by 2020.
December 8, 2012 - The Doha Amendment	The Doha Amendment was proposed to be added to the Kyoto Protocol and to renew nations' commitments from 2013 - 2020. That said, this amendment has still failed to enter into force.
2013 - China Pilots Carbon Pricing	China launches pilot ETS in several provinces, laying the groundwork for a national system.

November 4, 2020 - US Withdraws from Paris Agreement	Three years after President Donald Trump's promise to remove the nation from the Paris Agreement in 2017, the United States withdrew themselves from the agreement.
February 19, 2021 - The US Rejoins the Paris Agreement	The day of his inauguration, President Joe Biden signed an executive order to rejoin the Paris Agreement, which moved into power 30 days later. In doing so, he made the United States' new position on renewable energy clear, and placed the nation at the front of the fight once again.
2021 - China Launches National ETS	China introduces its national emissions trading scheme, initially targeting power generation, as a step toward market-based carbon regulation.
2023 - OECD Carbon Pricing Report	The Organisation for Economic Co-operation and Development emphasizes that differentiated carbon prices could significantly reduce emissions by 2030 but stresses the need for complementary policies.

Previous Attempts to Solve the Issue

The Kyoto Protocol/Doha Amendment

The protocol established, adopted on December 11, 1997, put into operation the United Nations Framework Convention on Climate Change and its work. It was the most important and influential action the UN had taken up to that point. Different from many other actions taken by the UN, this treaty takes an annex-based approach. In other words, it is only binding for developed nations, and places a heavier burden on them than it does of nations with lower carbon emissions. It is for this reason that it only set binding emissions targets for 37 nations. This was a famously controversial approach, which stopped the protocol coming into force until 2005, with nations such as the United States voicing their disapproval. In 2012, after the expiration of its first commitment period, the Doha Amendment was created, keeping a similar approach. Although it was adopted in 2013, it required the acceptance of 75% of nations, a process which took another 7 years, only happening on October 28, 2020, close to when the second commitment period was supposed to end.

The Paris Agreement

The Paris Agreement is a legally binding treaty which was adopted in 2015 and moved into force in 2016. The stated goal of the agreement is to keep global warming to below 1.5 degrees Celsius. Unlike the Kyoto Protocol, the agreement is binding to all member nations, marking one of the first times all nations have been brought together to combat climate change. At the current rate of progress, the UN estimates that zero-carbon solutions “could be competitive in sectors representing over 70% of global emissions,” 45% above where we are now. It would also be ignorant to not recognize the large amount of work that still must be done to keep its goals realistic.

United Nations Sustainable Development Goals (Goal 17)

Taxation and the SDGs is a lens through which the UN Tax Committee identifies, prioritizes and assesses its work. The Committee contributes directly to the achievement of SDG 17 through the promotion of international tax cooperation and provision of practical guidance on domestic as well as international tax matters and through its inclusive methods of work, with multi-stakeholder.

Possible Solutions

Enhance political and public support

One of the main challenges regarding the spread of the national carbon tax approach is undoubtedly public criticism and the resistance of governments to adopt this practice because of economic detriment. For this, we could educate the public and stakeholders on the benefits of carbon taxes, including emissions reductions, economic resilience, and funding for green initiatives. Furthermore, in order to encourage burning entities to start implementing carbon taxing, we could introduce carbon taxes at lower rates initially, gradually increasing them to allow time for businesses and consumers to adapt, as well as work with businesses, environmental groups, and local communities to co-design carbon tax policies, ensuring broad support. This way we will build global momentum and have a higher chance at cooperating with other major emitters and global organizations to reduce carbon emissions.

Improving Policy Design

This solution could only make the policy more appealing to prospective burning entities by offering a more flexible policy that helps balance economic performance with environmental sustainability. We could design carbon taxes with adjustable rates based on economic performance, also favoring developing entities and countries by not setting a general tax rate for all. Additionally, following other countries' examples, we could encourage the integration of a national carbon tax with other policies such as investments in clean infrastructure and technological advancements to help bring down carbon emissions in a more efficient and balanced way.

Bibliography

Center for Climate and Energy Solutions. “COP 15 Copenhagen | Center for Climate and Energy Solutions.” *Center for Climate and Energy Solutions*, 18 Dec. 2009,

Cheek, Linden. “3 Reasons We Are Still Using Fossil Fuels | University of Arkansas Sustainability Blog. *Wordpressua.uark.edu*, University of Arkansas, 10 Apr. 2020,

Davis, Julie Hirschfeld, and Coral Davenport. “China to Announce Cap-And-Trade Program to Limit Emissions.” *The New York Times*, 24 Sept. 2015,

Dumoulin, Andre . “A Brief Summary of the World Bank’s Carbon Pricing Report 2023.” *Www.ciat.org*, 9 Aug. 2023,

Ellerbeck, Stefan. “Explainer: Which Countries Have Introduced a Carbon Tax?” *World Economic Forum*, 8 July 2022,

Government Offices of Sweden. “Sweden’s Carbon Tax.” *Regeringskansliet*, Regeringen och Regeringskansliet, 26 Feb. 2018,

Mengden, Alex. “Carbon Taxes in Europe.” *Tax Foundation.org*, 5 Sept. 2023,

Nakano, Jane, and Scott Kennedy. “China’s New National Carbon Trading Market: Between Promise and Pessimism.” *Www.csis.org*, 23 July 2021,

Omolere, Mitota. “Carbon Tax: Definition, Pros and Cons, and Implementation.” *Earth.org*, 9 Jan. 2024,

Sen, Sweta, and Pravakar Sahoo. “Carbon Pricing for Sustainable Transition in India.” *World Development Perspectives*, vol. 34, 1 June 2024, pp. 100586–100586,

“Taxation and the SDGs | Financing for Sustainable Development Office.” *Financing.desa.un.org*,

UNFCCC. “The Paris Agreement.” *United Nations Climate Change*, United Nations, 2015,

Wu, Zhen, et al. “The United States and China on the Paths and Policies to Carbon Neutrality.” *Journal of Environmental Management*, vol. 320, 15 Oct. 2022, p. 115785,

Ye, Jason. “U.S. State Carbon Pricing Policies | Center for Climate and Energy Solutions.” *Center for Climate and Energy Solutions*, 2 Sept. 2019,