

Research Article

How Federal Carbon Tax is a Game Changer for Climate Change

Syed Sadique Basha^{1*}

Senior Architect, Shell (Oil and Gas), Dublin, Ohio, USA

Received 15 Nov 2024, Accepted 08 Dec 2024, Available online 10 Dec 2024, Vol.14, No.6 (Nov/Dec 2024)

Abstract

By charging for fossil fuel byproducts, the Government Carbon Expense serves as an important tool in the global effort to combat environmental change and boosts reductions in a variety of areas. This expense plan, which is presented as a crucial strategy measure, aims to solve the major issue of ozone-depleting substance discharges by imposing a monetary charge on carbon yields and then incorporating the natural cost of carbon pollution. The Government Carbon Assessment aims to provide financial incentives for businesses and consumers to reduce their carbon footprint, advance cleaner technologies, and switch to more sustainable energy sources. In an effort to promote a shift toward a low-carbon economy, this strategy tries to align financial activities with natural goals. Key findings suggest that the Government Carbon Duty might be able to cut down on the release of ozone-depleting substances, encourage mechanical advancement, and generate revenue for environmental projects. Its sufficiency depends on effective implementation, public recognition, and cooperative arrangements that assist affected businesses and weak populations. The implications of the public authority Carbon Evaluation connect past open lines, influencing overall climate systems and empowering worldwide coordinated effort. By organizing money related and regular focuses on, the public authority Carbon Cost is arranged as a pivotal gadget in the overall fight against natural change.

Keywords: Climate change, Carbon capturing, Carbon sequestration, sustainable environment.

Introduction

The most major problem of the 21st century is ecological change, which presents huge dangers to worldwide natural frameworks, economies, and social designs. The primary driver of environmental change is the rapid rise in ozone-depleting substances, primarily carbon dioxide brought on by the use of non-renewable energy sources. This prompts climbing worldwide temperatures, rehashed outrageous climate occasions, and interruptions to typical frameworks. These effects threaten biodiversity, exacerbate social inequality, and jeopardize financial security. It is essential to reduce fossil fuel byproducts in order to achieve long-term supportability and mitigate environmental change. The production of energy, modern transportation, and the majority of carbon dioxide emissions all contribute to an increase in global temperature. It is essential to reduce these emissions if the environment is to remain in balance and future generations are to be shielded from the negative effects of environmental change. Reduced discharges can be effectively achieved through mechanical advancements and financial incentives that result in lower carbon impressions.

The Public authority Carbon Obligation has arisen as the essential answer for this issue. By delegating a cost to the byproducts of fossil fuels, this obligation includes the ecological costs of carbon pollution and raises the cost of carbon dioxide emissions. Businesses and consumers alike are encouraged to adopt cleaner technologies, increase energy productivity, and switch to renewable power sources by this monetary sign. The Public power Carbon Commitment gives a monetary motivation to decreasing spreads and establishes pay for reinvestment in environment help and assortment drives. This strategy instrument accelerates the transition to a low-carbon economy by aligning financial actions with environmental objectives. The Government Carbon Duty is an all-encompassing strategy for dealing with environmental change that promotes practical change as a crucial step toward achieving global environmental goals.

Background And Context

Public Perception and Acceptance about carbon tax

There are many different general assumptions about the Government Carbon Duty, much of which is influenced by people's perceptions of its motivation and perceived reasonableness. It is seen as an essential tool for ecological preservation by supporters, who

*Corresponding author's ORCID ID: 0000-0000-0000-0000
DOI: <https://doi.org/10.14741/ijcet/v.14.6.6>

emphasize its significance in reducing byproducts of fossil fuels and combating environmental change. They underline the obligation's ability to finance manageable power drives and give discounts to offset costs. On the other hand, savants consider the cost to be an extra financial weight, particularly for low-pay families and adventures strongly subject to oil based commodities. Effective communication and instructive missions are essential for increasing public understanding and recognition. These endeavors can contribute to the development of support and advance a more informed discussion about this fundamental environment strategy by describing the duty's objectives and benefits.

Transparency and Utilization of Tax Revenues

Ensuring straightforwardness in the utilization of low carbon charge wages is essential for keeping up with public trust. States should make sure that the money is distributed in a fair and compelling way. They should help networks that are affected by the progress, support initiatives that address environmental change, and counterbalance different assessments. To avoid confusion and ensure that the cost meets its intended purposes, clear detailing and responsibility systems are essential. In addition, including partners in dynamic cycles and providing standard reports on income distribution can increase trust in the task's execution while simultaneously cultivating a sense of straightforwardness and responsibility.

Overview of the Impacts of Climate Change

Changes in the environment have far-reaching and significant effects on human social structures and normal structures. Climate events like heat waves, typhoons, and heavy precipitation are becoming more frequent and severe as global temperatures rise. This causes more flooding, dry spells, and out-of-control fires that disrupt biological networks and systems.

As a result of global warming, polar ice melts and seawater expands, resulting in rising ocean levels that threaten coastal areas and low-lying areas with flooding and devastation and put homes, businesses, and foundations in danger. Freshwater resources are also affected by a lack of ice masses and ice sheets because many regions rely on cold liquid for agriculture and drinking water. Since changing environments alter biological systems and territories, species that are unable to adapt or relocate face serious threats to their survival, resulting in a lack of biodiversity and environment management services. Due to sea warming and fermentation, coral reefs, which support a variety of marine life, are experiencing a period of decline, further jeopardizing marine environments.

Changes in the environment have a significant impact on human health as well. Increased temperatures and contamination contribute to respiratory and cardiovascular problems, while

shifting disease vectors facilitate the spread of diseases like dengue fever and jungle fever. Additionally, the impact on agriculture and food production may exacerbate food insecurity and hunger, particularly in rural areas. Together with the various sources of ozone-depleting substances, the actual rise in carbon dioxide emissions has had significant and widespread effects on the environment, biological systems, and social structures of humans. Addressing these troubles requires total and worked with attempts to reduce releases and acclimate to the advancing climate, which can be kept by resistance from organizations and regions that rely vivaciously upon oil subordinates, stresses over power, and the potential for carbon spillage. Legislative bodies frequently provide temporary assistance measures to alleviate these issues, such as sponsorships for impacted businesses or specialized assistance for low-income families.

Challenges and Criticisms

The Federal Carbon Tax has significant effect in many respects and have several challenges and criticisms. In this regards a few points have been discussed below.

Economic Concerns and Industry Competitiveness

Concerns about the potential financial impact of imposing a carbon tax on businesses, particularly those that heavily rely on non-renewable energy sources, are stoked. The seriousness of these businesses may be affected by the duty's increased functional costs, which may result in higher costs for customers, decreased financial development, and even job losses. State-run administrations may be required to provide specialized assistance to businesses in transitioning to the new cost structure in order to alleviate these concerns. This could be in the form of appropriations, tax breaks, or other forms of assistance to help them adapt to the carbon tax while maintaining their prominence on the global market. States can assist in reducing the financial effects on businesses while still achieving their natural goals by providing steady and robust progress.

Compliance and Enforcement Issues

Essential components of the successful implementation of this ecological strategy include taking care of authorization issues and ensuring consistency with the carbon charge. To accurately measure outflows and implement charge liabilities, effective monitoring and detailing frameworks are essential, thereby preventing attempts to avoid the cost. Both specific difficulties and deliberate efforts to avoid duty can result in persistent difficulties. In order to ensure that all components adhere to the carbon charge requirements and contribute to the reduction of ozone-damaging substance outflows, successful authorization necessitates concise and clear guidelines, standard reviews, and punishments for resistance.

Carbon tax and Public Resistance

Public obstruction and security from the carbon cost can introduce gigantic hardships, yet these can be kept an eye on through various frameworks, including clear correspondence about the tax breaks', offering assistance for influenced get-togethers, and displaying powerful outcomes from tantamount methodologies, which can help with building greater assistance for the obligation, and attracting with accomplices and watching out for their inclinations proactively, through open trade and conversation, can in like manner help with developing a prevalent understanding of the evaluation's objectives and ease up worries, ultimately adding to a more productive execution of the carbon charge system.

Global Cooperation and Leadership

Overall composed exertion is fundamental in the fight against ecological change, and carbon assessing drives like the Public authority Carbon Obligation can set areas of strength for a for various nations to follow. The nation has the potential to rouse global activity and foster collaboration by demonstrating the accuracy of carbon estimation. In addition, authority in environmental strategy has the ability to position the nation as a pioneer in sustainable practices and green innovation, advancing the nation's progress toward a low-carbon future and strengthening its position as a natural steward.

Long-Term Goals and Sustainability

For establishing and maintaining public trust, conducting carbon assessments must be straightforward and effortless. By financing projects that address environmental change, counterbalancing various expenses, and supporting networks that are disproportionately influenced by the progress, legislatures should demonstrate that the income generated is being used successfully and fairly. To ensure liability and hinder misuse, good obligation plans and clear uncovering parts are crucial. Including partners in dynamic cycles and providing regular reports on income designation can boost confidence in the strategy's execution by fostering a sense of shared responsibility and collective action toward a low-carbon future. Policymakers can maintain public trust and ensure that the carbon tax continues to be an essential tool in the fight against environmental change by emphasizing simplicity and accountability.

Methodology

Data Collection

To understand the role of the federal carbon tax in the climate change this is necessary to gather the data from the different sources, so for the sake of this research work the data was collected from the

government sources and the industry sources and some part of it from the academia as well.

Government Reports

A detailed explanation report about the national greenhouse and the climate polices was shortlisted and it is concluded that the policy making and the impact of their implementation should be done with the proper care and consideration as they play a significant role in shaping the climate change. Economic sources also ets involved in this regard as they play their part for the implementation of the different strategies that directly or indirectly effects the economic performance. Different countries submit the annual reports to the international stakeholders like the united nations framework convention on the climate change, about the ongoing practices and the results of the previous performance. They are also have a significant importance in this matter.

Academic studies and Industry reports

A thorough research from different journal articles and the research papers we got some critical insights about the framework which is very necessary for the general knowledge and understanding the mechanism by which carbon tax influences the climate change. It is notices that the data gathered from the reports of the institutes like the national bureau of economics have provided a great amount of the knowledge to understand the impact of the federal carbon tax on the climate change.

When the discussion is going on about the impact of something on the climate change then we cannot neglect the part of the industry in the whole scenario, so we have consulted the information from the industry sources as well to finalize the findings and the discussion of our research work. International energy agency is an important association for the information about the carbon tax insights because they provide comprehensive data and the analysis about the industry trends and the implementation of the current practices.

Economic Impacts on Industries and Consumers

The Government Carbon Assessment will have both positive and negative financial effects on a variety of businesses and customers in particular ways. From one point of view, businesses like construction, transportation, and agribusiness that rely a lot on petroleum derivatives may have to deal with higher operational costs, which could hurt their importance and profits. Legislative bodies have options for mitigating these effects, including carbon valuing adjustments, appropriations, and expense exclusions. However, the switch to cleaner technologies may balance some of the negative effects by encouraging growth and opening up new financial opportunities. The carbon assessment may result in higher prices for

energy and products with high carbon impressions for customers, but income-reusing tools like discounts and duty reductions can help alleviate the overall effect. The financial burden on customers can be successfully made due by using charge income to assist low-income families and investing in energy-efficient products, ensuring a more equitable transition to a low-carbon economy.

Revenue Generation and Allocation

Income produced from the Government Carbon Duty can be significant, contingent upon the expense rate and the degree of emanations. This income gives a huge chance to subsidizing environment related drives and tending to the effects of the expense.

Pay and Refunds

To counterbalance the financial effect on families and organizations, particularly those in weak areas, states can utilize income to give direct discounts or appropriations. This can assist with reducing monetary weights and guarantee that the duty doesn't excessively influence lower-pay people or private ventures.

Innovative Work

Assets can be distributed to help innovative work of new advances and developments that lessen emanations. This remembers progressions for carbon catch and capacity (CCS), sustainable power advances, and energy-productive practices.

General Income

At times, income might be utilized to help general government spending plans, which can be especially significant in nations with monetary imperatives. Be that as it may, the utilization of carbon charge income for general purposes ought to be painstakingly figured out how to guarantee it lines up with the objectives of diminishing emanations and supporting environment variation.

Examples of Productive Execution

English Columbia, Canada, is a surprising representation of viable carbon charge execution. Introduced in 2008, the cost covers numerous oil based commodities and has been logically extended to drive surges diminishes. Pay is used to lessen various evaluations, support green drives, and give limits to families and associations.

British Columbia's experience demonstrates that a well-designed carbon tax can lead to significant emissions reductions while maintaining economic growth. The province has seen a reduction in greenhouse gas emissions and a shift towards cleaner energy sources, showcasing the potential benefits of carbon pricing as a climate policy tool.

Generally, the Government Carbon Duty works by putting an expense on fossil fuel byproducts to energize decreases, with key contemplations including deciding the ideal carbon cost, following discharges, and disseminating income. Powerful execution requires cautious route of monetary ramifications for ventures and buyers, yet effective contextual investigations like English Columbia exhibit the capability of this way to deal with drive significant environment activity and advance a low-carbon economy.

Future Outlook

The future headway of the Public authority Carbon Cost incorporates potential changes, augmentations, and breaker with more intensive climate plans.

Possible Modifications and Enhancements to the Carbon Duty

To increase the carbon charge's sufficiency, it is essential to continuously evaluate and refine it. This could mean increasing the cost to cover additional areas, improving observing and revealing components, changing the duty rate to ensure that it reduces sufficient emanations, or both. In order to keep up with its relevance and impact, it will be crucial to have the ability to adjust the cost in response to new information and shifting conditions.

Expansion and getting together with Other Climate Methodologie

Coordinating the Public authority Carbon Obligation with other climate draws near, similar to inspirations for feasible power and energy viability standards, can lay out a more thorough method for managing climate help. The overall viability of the project and its contribution to the global goal of reducing outflows can be improved through coordination with global carbon valuing components and environmental arrangements.

Conclusion

For the better understanding of the readers about the importance and the impacts of the federal carbon tax on the climate change and their different insights, this article provides comprehensive information based on the several key points. The Public authority Carbon Obligation tends to a basic stage towards directing natural change by putting an expense on petroleum derivative results and enabling sensible practices. The board of financial effects, proper execution, and attention to social and political issues are all necessary for its viability. The obligation not simply drives mechanical turn of events and harmless to the ecosystem power energy movements yet furthermore empowers a more fair-minded and direct method for managing climate technique. It is evident, given the Government Carbon Expense's viability, that the

strategy holds significant commitment to achieving environmental goals and supporting a practical future, despite the challenges. The Government Carbon Expense can play a crucial role in the global effort to combat environmental change and advance a cleaner, stronger economy by continuously refining the obligation, coordinating it with more extensive environmental procedures, and encouraging global collaboration.

References

- [1] D. A. Carroll and K. A. Stevens, "The short-term impact on emissions and federal tax revenue of a carbon tax in the U.S. electricity sector," *Energy Policy*, vol. 158, p. 112526, 2021/11/01/ 2021, doi: <https://doi.org/10.1016/j.enpol.2021.112526>.
- [2] Sarjiya, L. M. Putranto, R. F. S. Budi, D. Novitasari, Deendarlianto, and Tumiran, "Role of the energy-carbon-economy nexus and CO2 abatement cost in supporting energy policy analysis: A multi-scenario analysis of the Java-Bali system," *Renewable and Sustainable Energy Reviews*, vol. 187, p. 113708, 2023/11/01/ 2023, doi: <https://doi.org/10.1016/j.rser.2023.113708>.
- [3] A. Ali, M. R. Khan, and A. M. Ghouri, "Chapter 4 - Carbon neutrality concept and progress," in *Recent Developments in Green Finance, Green Growth and Carbon Neutrality*, M. Shahbaz, K. Dong, D. Balsalobre-Lorente, and A. Gedikli Eds.: Elsevier, 2023, pp. 85-108.
- [4] L. Chen, G. Huang, B. Luo, and L. Liu, "Unveiling environmental implications of Canadian electricity system's low-carbon transitions: A multi-regional stochastic optimization-driven input-output model," *Journal of Cleaner Production*, vol. 420, p. 138363, 2023/09/25/ 2023, doi: <https://doi.org/10.1016/j.jclepro.2023.138363>.