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# **INTRODUCING CARBON EMISSION TAX IN BANGLADESH AND ITS IMPACT ON THE ENVIRONMENT**



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September  
**2023**

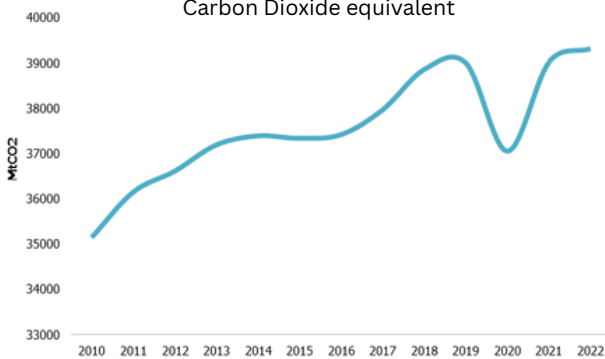


# Introducing Carbon Emission Tax in Bangladesh and its Impact on the Environment

## Introduction

With the rising irrefutable global issue of climate change and global warming, countries are increasingly exploring innovative policies to mitigate the impact of carbon emissions on the environment, one of the most severe threats in the world, instigating damage to human beings. Over the decade, the carbon emission in the world has accelerated, with a drop during the COVID-19 period in 2020. The emission in 2010 was 35,149.9 MtCO<sub>2</sub>, which increased to 39,315.5 MtCO<sub>2</sub> in 2022, with a growth rate of 0.8% (Energy Institute, 2023) compared to the previous year (Figure 1).

**Figure 1.** Carbon Emission in the World Million tonnes of Carbon Dioxide equivalent



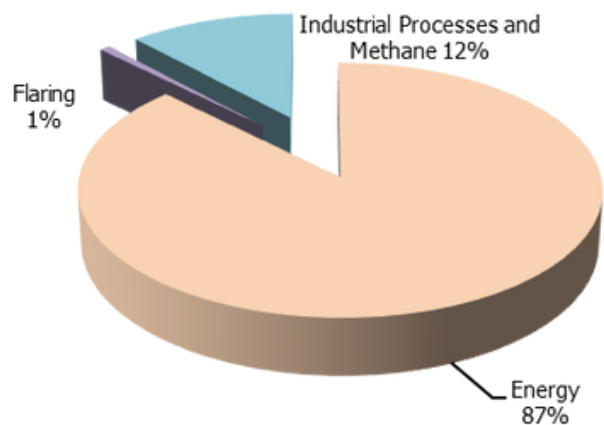
Source: Energy Institute

Bangladesh is a country that is particularly vulnerable to the effects of climate change. Rising sea levels, extreme weather events, and threats to agriculture are severe challenges the country faces. Bangladesh has proposed a tax on carbon emissions to address these challenges for the FY2023-24 budget. This essay delves into the carbon tax's application and its potential impact on Bangladesh. It examines the underlying mechanisms of a carbon tax, its relevance in the context of Bangladesh's unique climate challenges, the intricate policy-making process, potential benefits, challenges of implementation, and lessons from other nations.

## Carbon Emission and Pricing Schemes

The gases in the atmosphere that elevate the surface temperature of planets are comprised of Greenhouse gases, where carbon dioxide is the major contributor, leading to the greenhouse effect (World Meteorological Organization, 2017). According to the Energy Institute's data in 2022, the world's carbon dioxide emissions mainly come from energy use, which is 87%, followed by industrial processes and methane with 12% emissions, and lastly, gas flaring associated with oil extraction, which stood at 1% (Figure 2). As more countries increased awareness regarding climate change and the environmental impact of carbon emissions, the carbon markets have developed over the years.

**Figure 2.** Global Carbon Dioxide Emissions Source Mtco2

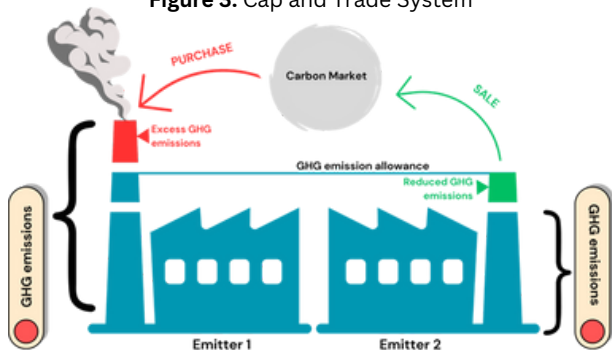


Source: Energy Institute

The carbon pricing schemes are implemented to control emissions worldwide, which can be divided into different instruments adopted by countries. The two central pricing schemes among the 73 tools worldwide (World Bank, 2023) include carbon taxes and emissions trading systems (ETSs), which cover 23% of global emissions, growing from 7% ten years back, as stated in the State and Trend Report of World Bank, 2023 (World Bank, 2023). The carbon tax is a fee or price on carbon

imposed on businesses and individuals that emit greenhouse gases. At the same time, ETS creates a cap for the carbon emission level, which lets the low emitter sell their allowance level to more significant emitters (World Bank, 2023) and can also be referred to as a cap-and-trade system (Figure 3). Territories are consistently unveiling new carbon pricing mechanisms or a mixture of different approaches. The landscape of carbon pricing has evolved, and initiatives do not always neatly fit into these two categories. Among the pricing schemes, the carbon tax has comparative cost-effectiveness compared to other approaches, according to economists and international organizations (Lin & Li, 2011). EU countries like Denmark, Finland, Sweden, Netherlands, and Norway were the first adopters of the carbon tax (Lin & Li, 2011). These countries have successfully implemented carbon taxes, contributing to emission reductions and revenue generation.

**Figure 3. Cap and Trade System**



## Approach to Carbon Tax in Bangladesh

Developing country like Bangladesh is ranked 7th among the countries affected most by climate change in 2000-2019 and is recognized as one of the world's most exposed nations to the impacts of climate change especially by Sea Level Rise (SLR) among other external drivers. According to a study by the Department of Environment, by this century SLR will submerge 12.34%-17.95% of the coastal area in Bangladesh (Ministry of Environment, Forest and Climate Change). Within 2030, Bangladesh aims to reduce carbon emissions by 89.47 MtCO<sub>2e</sub> representing a 21.85% decrease compared to business-as-usual (BAU) levels (Ministry of Environment, Forest and Climate Change). Recently, to reduce carbon emissions, the government of Bangladesh introduced the carbon tax in the budget FY2023-24. The pricing has been proposed for owning more than one car, depending on the engine size, and the tax rate ranges from BDT 25,000 to BDT 3.5 lacs (Matlub Ul Alam, 2023). International experiences offer treasured insights into the potential success of a carbon tax in Bangladesh. As the most efficient mitigation instrument, the carbon tax is highly recommended by economists and international organizations (Lin & Li, 2011).

There are other policies Bangladesh adopted over the years to realize its vision of climate-resilient sustainable development. Some of these policies include:

- Bangladesh Climate Change Trust Act
- Nationally Determined Contributions (NDC)

- Bangladesh Climate Change Strategy and Action Plan (BCCSAP)
- Bangladesh Delta Plan
- National Adaptation Plan (NAP)
- Mujib Climate Prosperity Plan (MCPPI)
- Bangladesh Climate Fiscal Framework
- Disaster Management Act of 2012
- National Disaster Management Policy of 2015
- Standing Orders on Disaster from 2019
- Plan of Action: Sendai Framework for Disaster Risk Reduction
- National Strategy on Internal Displacement Management

## Global Perspective on Carbon Pricing

Carbon tax is a carbon mitigation method and a tool to generate income, stimulate innovation, and help achieve broader sustainability and development goals. Although the world carbon emission did not decrease, in 2022, the emission quantity increased negligibly by 0.8% (Energy Institute, 2023). High-income countries have successfully implemented carbon pricing, and European Union countries like Sweden, Norway, Netherlands, Denmark, Finland, etc., comprised high revenue from the total revenue earned from carbon pricing. However, not all high-income countries had a carbon emission decline. For instance, Sweden, Norway, Netherlands, and Denmark experienced a decline in carbon in the annual and 10-year growth rates except for Finland (Energy Institute, 2023). Nevertheless, the Overall EU countries comprised only 10% of the world's carbon emissions, which experienced a decline in 2022 by 2.2% compared to 2021 (Energy Institute, 2023). Moreover, the 10-year growth rate for the EU countries also fell, supposed to result from an effective policy measure the EU countries took against carbon emissions.

Asia Pacific Countries comprised 51% of the total carbon emission in the world, with China taking the highest percentage of 30.2% in 2022 (Energy Institute, 2023). According to findings from a study on carbon tax impact on carbon emission reduction in China, it indicated that as the carbon tax was raised, there was a positive impact on the inflation rate, an increase in the rate of carbon emission reduction, and an amplified adverse impact on GDP and employment. The study suggested policy formulations, like the incorporation of carbon taxation and carbon trading, implementation of dynamic adjustment mechanisms, and the recreation of tax neutrality, which need to be considered for setting carbon pricing.



State and Trend of Carbon Pricing Report 2023 states that India does not have a national carbon tax or ETS as of 2023 which comprises 7.2% of the world's carbon emission (Energy Institute, 2023). However, India has adopted certain policies like tax rate on coal production which is set at USD 5.4 per tonne of CO<sub>2</sub> emitted (World Bank, 2023). Through the carbon tax rate, India possesses the potential to not only curtail its carbon emissions but also establish a guide for fellow G20 nations. Nevertheless, other external factors are affecting the emission of carbon resulting from consuming energy, fossil fuels, etc. Factors include economic turmoil, inflation, the Russia-Ukraine war, climate change, etc., which will have an impact on countries' policies and consumption of energy or fuel, affecting carbon emissions. Emission levels for the first half of this year were lower than in 2021 before summer heat waves reversed the trend with increased energy consumption (IEA, 2023).

### Policies for Bangladesh

In Bangladesh, carbon pricing can be applied to various sectors, including electricity generation, transportation, and industrial production. The rates might vary depending on the industry and the amount of greenhouse gases emitted. The government can earn revenue from carbon pricing to fund environmental development projects, such as renewable energy projects and climate adaptation measures. According to the State and Trends of Carbon Pricing report, as policies in jurisdictions have evolved and diversified to reflect increased ambition, the government revenues from carbon pricing, mainly carbon tax and ETS, have increased dramatically to around USD 95 billion in 2023 (World Bank, 2023). There is another instrument where the revenue flows vertically known as carbon credit, which the regulators sell to industries or businesses to earn revenues (Credits, 2022). Offset carbon is another instrument where the revenue flows horizontally between companies. There are many mechanisms Bangladesh could adopt to effectively reduce carbon emissions and earn revenue for social development purposes.

### Benefits and Challenges in the Implementation of Effective Carbon Pricing in Bangladesh

Bangladesh can tailor its policy to address domestic benefits and challenges while capitalizing on successful strategies employed by different nations that use carbon pricing. The ETS represented approximately 69% of government revenues worldwide from direct carbon prices, while carbon taxes took the rest, 31% (Dumoulin, 2023). The revenue can be distributed based on which sector the government wants the fund to be allocated. On average, it is estimated that 46% of revenues are allocated to specific policies, 29% to the general budget, 10% to direct transfers, and 9% to tax reductions (Dumoulin, 2023). Bangladesh can benefit from implementing a carbon tax by earning revenues and reducing carbon emissions, which can be invested in climate change mitigation and adaptation initiatives or directed towards social welfare programs.

Nevertheless, as a developing nation, any policy influencing economic aspects requires careful execution. A carbon tax would raise industry

production costs, potentially translating to higher consumer prices. Moreover, Bangladesh heavily relies on coal for electricity generation, rendering it directly vulnerable to the consequences of a carbon tax. Another challenge arises from the lack of precise carbon emissions data for many small and medium enterprises (SMEs). These small enterprises may lack the resources and expertise to measure their emissions accurately. Consequently, making an effective and equitable carbon tax demonstrates some difficulties. Moreover, equitable distribution of generated revenue becomes vital for a nation like Bangladesh, where substantial wealth disparity exists.

### Conclusion

Bangladesh's journey towards effective carbon pricing involves tailoring policies to domestic circumstances while drawing lessons from global implementations. Bangladesh's carbon pricing strategy can yield revenues that support environmental projects and climate adaptation measures. However, as a developing nation, the careful execution of policies that impact the economy is imperative. The imposition of a carbon tax could raise production costs and lead to higher consumer prices, with the country's reliance on coal for electricity generation adding a layer of complexity. Addressing these challenges necessitates the availability of precise emissions data, equitable revenue distribution, and a comprehensive understanding of the economic landscape.

As Bangladesh navigates the path of carbon pricing to combat emissions and foster sustainability, it must balance economic considerations with environmental imperatives. The pursuit of an effective carbon tax, backed by insights from global practices, could contribute to emission reduction and the country's overall development and resilience in the face of a changing climate.





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Emerging Credit Rating Limited (hereinafter referred to as ECRL) began its journey in the year 2009 with the motive to deliver credible superior & quality credit rating opinions in various industry segments around Bangladesh. ECRL obtained a credit rating license from Bangladesh Securities and Exchange Commission (BSEC) in June 2010 as per Credit Rating Companies Rules 1996 and also received Bangladesh Bank Recognition as an External Credit Assessment Institution (ECAI) in October 2010 to do the rating of Banks, Financial Institutions and their borrowers and also from Insurance Development & Regulatory Authority (IDRA) in 2015 to do the rating of Insurance Companies & affiliated with Malaysian Rating Corporation Berhad.

Emerging Credit Rating Limited's team is oriented towards the continuous improvement of processes, striving for an important role in the leadership of the business world. Every individual in ECRL is committed to providing topmost ingenious Credit Rating Services and Comprehensive Research Services in Bangladesh. ECRL's rating services and solutions reflect independence, professionalism, transparency, and impartial opinions, which assist businesses in enhancing the quality of their decisions and helping issuers access a broader investor base and even smaller known companies approach the money and capital markets. The Credit Rating process is an informed, well-researched and intended opinion of rating agencies on the creditworthiness of issuers or issues in terms of their/ its ability and willingness to discharge its financial obligations in a timely manner. Issuers, lenders, fixed-income investors use these risk assessments for the purpose of lending to or investment in a corporation (such as a financial institution, an insurance company, a non-banking corporation or a corporate entity) as well as evaluating the risk of default of an organization's financial obligations in terms of loan or debt.

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ECRL Research provides insights, opinions, and analysis on Bangladesh and International Economies. ECRL Research conducts surveys and produces working papers and reports on Bangladesh's different socio-economic issues, industries, and capital market. It also provides training programs to professionals from financial and economic sectors on a wide array of technical issues.

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