

Carbon Tax and Sustainable Development

Mahima Bhaisare¹, Garima Bhaisare²

¹Student, Natwarlal Maniklal Dalal College of Arts and Commerce and Law, Gondia, Maharashtra, India,

²Student, Maharashtra National Law University, Nagpur, Maharashtra, India,

Correspondence Author: Mahima Bhaisare

Date of Submission: 05-11-2020

Date of Acceptance: 17-11-2020

ABSTRACT: This research paper aims to explain tax imposition on carbon and carbon contents and the goals of sustainable developments. Nowadays, carbon tax is considered as major aspects in the field of economics. Tax on Carbon i.e. nationwide Carbon Tax was introduced in India in the year 2010 on 1st July. It was primarily of 50 rupees per tonne that is \$1.07 per tonne. This paper consists the existing legislation on carbon tax in different countries apart from India. The environmental effects of carbon taxation and the reasoning over it has also defined in the paper. Such effects residues impact on environment and living beings, which requires the sustainability goals. Effects contains the economic effects also, here the researcher have mentioned the economic effects of national as well as the international implementation on carbon tax. In this research paper, the researcher has discussed about the carbon tax and its limitations through the comparison of Emissions Trading System, and analysed the global effects of carbon taxes in developing countries.

(Keywords: Carbon tax, Sustainable development, Economics, Existing legislation, Environment, Reasoning, Living beings, implementation, Emissions Trading System, Global effects.)

I. INTRODUCTION

The significance of environmental polices is increasing in the field of economics nationwide and internationally also. For the development of environment and welfare of the living beings it's been necessary for the government to introduce as much as policies they can. In the World Commission on Environment and Development, 1987, an ecological aspect is included in the form of quote from the popular Brundtland report that – “Today the scale of ow (sic) interventions in nature is increasing and the physical effects of our decisions spill across national frontiers. The growth in economic interaction between nations amplifies the wider consequences of national decisions. Economic and ecology bind us in ever-tightening

networks. Today, many regions face risks of irreversible damage to the human environment that threaten the basis for human progress.” This implies the necessity of introducing such policies in regards to both, the economic and ecologic dimensions, otherwise it is not possible to achieve the goals of sustainable development.

Carbon tax is considered as one of such policies. Carbon tax is imposed on the carbon contents as it is contemplated that it would ‘increase incentives for investments of renewable energy sources and disincentivise the usage of carbon incentive production factors.’ The main objective of the research would be the question – “Is carbon tax an effective instrument to tackle the problem of sustainable development and climate change?” Carbon tax was introduced in India in the year 2010 on 1st July. It was primarily of 50 rupees per tonne that is \$1.07 per tonne. This was changed with the new government of India, by the Prime Minister Narendra Modi. The tax on carbon has been 100 rupees per tonne and in the budget of 2015 – 16 it further changed to 200 rupees per tonne. Currently the tax on carbon is 400 rupees per tonne.

II. REVIEW OF LITERATURE

The literature review on this topic have clarified many essential points that would be considered as the significant research on the topic “Carbon Tax and Sustainable development”. There have been many scholars till date who have reached to several conclusions in association with the topic. The research on “The Impact of Carbon Taxes on Growth Emissions and Welfare in India: A CGE analysis” by Basanta K. Pradhan and Joydeep Ghosh has analyses the impact of two climate policy namely global carbon tax and emission trading permits and their distributional approach. This also explains about the carbon tax on the emission of greenhouse gases including carbon dioxide (CO₂) in depth and as a review of literature this can be taken as a significant research.

Another one is the “Discussion Paper on Carbon Tax Structure for India”, it was submitted by the Shakti Sustainable Energy Foundation which describes their foundation as – “We works to strengthen the energy security of India by aiding the design and implementation of policies that support renewable energy, energy efficiency and sustainable transport solutions.” Its sub-section about the basis for determining the carbon tax rate contains the approaches which determines the impact of carbon tax which is imposing on the emissions of carbon contents. An economic survey is done on the “Sustainable Development and Climate Change” by The Hindu, have briefly exaggerated the relation between carbon tax and the goals of sustainable development.

III. RESEARCH METHODOLOGY

This paper consists about the Carbon tax and sustainable development. In this, the researcher has specifically referred the articles provided over the topic of the project. This paper explains with respect to carbon taxation in the country and does it be considered as the sustainable development for achieving the goals of sustainability. The project follows the doctrinal method of research to complete it, as it contains the ideas of Individuals and the contrasting nature of several researchers and experts on the carbon tax and sustainable development. There are various articles and reports that has been referred to exaggerate about the carbon taxation and its sustainability. Different primary and secondary sources have assisted the researcher, and it also includes the usage books on Indian Economy, research papers, etc. On the other hand, the term sustainable development is also been an interest of individuals for its ability of providing natural resources on which the economy and humans depend.

1.1 Aims and Objectives

The aim of the project is to study in depth about the carbon tax and its sustainability in the development of Indian economy. Carbon tax and sustainable development can be considered as co-related terms. So, in this project, the objectives would be:

1. To study about Carbon tax, as in, its importance, usage and need in the economy,
2. To explain the variations in environment and human health as an effect of Carbon Taxation,
3. To study about the sustainable developments in the country,
4. To examine that carbon tax be considered as the sustainable development.

1.2 Research Question

1. What is Carbon Tax?
2. What is the meaning of sustainable development?
3. What are the features of carbon taxation in the field of economics?
4. What are the benefits of sustainable development?
5. Does carbon tax be considered as the sustainable development for achieving the goals of sustainability?

1.3 Research Hypothesis

The hypothesis on this research would be on the technicality on the imposition of tax on carbon elements. Further the research will analyse the impact of carbon tax on the environment and human beings, also its impact on the economic. Economic effect includes in reference with the national and international implementation of imposition of carbon tax on the carbon contains elements including carbon dioxide and other greenhouse gases. Carbon tax is imposed on the emitters of such products so, the hypothesis would also be that how much of the amount of carbon production will be safe for the environment.

IV. CARBON TAX

Carbon tax is a fee imposed on the substances and element which are composed from carbon. Like income tax, revenue tax and all, Carbon tax is also basically a tax which is paid by the emitters. Here the kinds of emitters are the greenhouse gases emitters. The taxes imposed on greenhouse gases are broadly of two types: 1. Emission tax and 2. Carbon tax. Emission tax is defined as “The tax which based on the quantity that an entity produces”, while carbon tax is referred to “The tax based on goods and services that are generally greenhouse gas intensive”. A large number of countries across the world imposes Carbon tax or likewise such as energy tax on the carbon contents. The proposal of carbon tax has been introduced by Congress for certain years but unable to come into force. Finally, with the support of economists and political appealing, tax on Carbon i.e. nationwide Carbon Tax was introduced in India in the year 2010 on 1st July, which was primarily of 50 rupees per tonne that is \$1.07 per tonne.

At the point when a hydrocarbon fuel, for example, coal, oil, or petroleum gas is scorched, its carbon is changed over to carbon dioxide (CO₂) and different mixes of carbon. CO₂ is a warmth catching ozone depleting substance which causes an Earth-wide temperature boost, which harms the

climate and human wellbeing. Since ozone depleting substance outflows from the ignition of petroleum derivatives are firmly identified with the carbon substance of the particular fills, this negative externality can be made up for by burdening the carbon substance of non-renewable energy sources anytime in the item pattern of the fuel. Carbon charges are a sort of Pigouvian tax (i.e. a tax on any market activity that generates negative externalities) and help to address the issue of producers of ozone depleting substances not confronting the full social expense of their activities. Examination shows that carbon burdens adequately diminish ozone depleting substance discharges. Financial analysts by and large contend that carbon charges are the most proficient and successful approach to control environmental change, with the least unfavourable consequences for the economy.

V. SUSTAINABLE DEVELOPMENT AND ITS GOALS

Sustainable development tends to the overall development of the nation. Sustainable Development Goals are also known as the Global Goals. The concept of sustainable development was initially started by all the members of the United Nation States in the year 2015 as a worldwide concept to stop or lessen the poverty, security of the planet, and promise all the people to enjoy harmony by the year 2030. There were 17 goals of sustainable development has been introduced for the welfare of the nation and balance the social, economic and environmental sustainability. Sustainable development allows in the efficiency that would help in the land and construction projects to reduce their impact on the environment by permitting them to create models of self – efficiency. Sustainable development can also be considered as an approach to the economic planning for the future generation by attempting to fostered the growth in the economy while preserving the quality of environment. It was also made cleared by the world leaders in the preamble for the 2030 agenda that they are – “Determined to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on the climate change, so that it can support the needs of the present and future generations.” The challenges before the United Nations Environment in the 2030 Agenda is – “To develop and enhance integrated approaches to sustainable development – approaches that will demonstrate how improving the health of the environment will bring social and economic

benefits. Aiming at reducing environmental risks and increasing the resilience of societies and the environment as a whole, United Nation Environment action fosters the environmental dimension of sustainable development and leads to socio – economic development.”

VI. EXISTING CARBON TAX LEGISLATION

The proper definition for the carbon tax is – “The emissions of carbon dioxide and other greenhouse gases are changing the climate. A carbon tax puts a price on those emissions, encouraging people, businesses, and governments to produce less of them. A carbon tax’s burden would fall most heavily on energy intensive industries and lower – income households. Policymakers could use the resulting revenue to offset those impacts, lower individual and corporate taxes, reduce the budget deficit, invest in clean energy and climate adaptation, or for other uses.”

According to the Economists, India has been thinking on the carbon taxation as a significant policy for the carbon mitigation and to achieving the climatic goals. The main aim of carbon taxing is to induce the policy – makers to add some changes in emissions by putting charge on carbon and carbon contents. Here are some key points of carbon mitigation strategy prepared by the Council on Energy, Environment and Water (CEEW) and Environmental Defence Fund (EDF) along with Shakti Sustainable Energy Foundation in the White Paper. In the worldwide, there are 26 carbon tax policies including developed and developing countries, which in total counted around \$33 billion in revenue in 2017. And by 2020, it has been decided that the existing taxes will cover around 5% of carbon dioxide emissions globally. When the carbon tax is introduced as a policy, the primary step would be to examine the types of gases and field to be covered, as the greenhouse gas emissions includes many sources such as wastes, fossil fuels, industrial operations, etc.

It was also said in the White Paper that – “Many jurisdictions adopt an increasing carbon tax over time. The tax rate might be low during the initial phase to allow market participants and the economy to adjust, and then it could be progressively increased. There are different approaches to increase the tax rate across time.” The legislation was changed with the new government of India, by the Prime Minister Narendra Modi. The tax on carbon has been 100 rupees per tonne and in the budget of 2015 – 16 it

further changed to 200 rupees per tonne. Currently the tax on carbon is 400 rupees per tonne. Policy makers want to avoid the unnecessary effects of the carbon tax like the carbon leakage and negative distributional impacts. Therefore, the Revenue Management and distribution added an aspect for carbon tax system and hence, it was stated in the White Paper that: "There are two basic approaches for using carbon tax revenue. The first is 'revenue neutrality', whereby the revenue collected is remitted back to households and business while reducing other taxes. The second approach is to increase spending, such as using the revenue to support government initiatives and to pursue public.

VII. THE ENVIRONMENTAL EFFECTS

The main purpose of carbon tax is to reduce the greenhouse gases emission. With the introduction of carbon tax, the emitters of carbon contents like fossil fuels and all have lowered the emissions, as the amount of tax is depending upon how much carbon emits when the fuels burned. By imposing carbon tax, government can increase the reduction in emission of carbon elements by increasing the federal revenue, which can charge on those emissions directly or charge on fuels that release the gases like carbon dioxide when burned. Emissions of carbon dioxide and other greenhouse gases absorbed in the atmosphere and contribute in the change in climate which causes a long term and costly global problem. When the temperature changes with the change in climate, it may cause global problem including the effects on living beings and environment.

1.1 Reasoning for The Carbon Tax

The logic behind the introduction of carbon tax is simplify as taxing the manufacturing of carbon contains products will increase the costs of the products as well. This will cause two effects, first, the carbon tax rights for the negative environmental externalities of manufacturing, like any Pigouvian tax will intends to do so. Second, it will create incentives for other factors of production, if the tax on carbon contains production increase in the amount, and so it diverts from an economy which harms the environment to the utilisation of renewable input resources. This effectively made in the shifts in the economy towards the eco-friendly environmental input sources, emissions of the carbon elements will decrease, therefore, cause less harm to the environment. The effects of carbon tax on economy is to lessen the emissions of carbon dioxide and

greenhouse gases which is significant to achieve the goals of sustainability. Plus, this will decrease the amount of emissions which is again put an important impact on the environment. Therefore, the introduction of carbon tax fulfils the two conditions which in results helps to maintain the environment. This is the reasoning of the effects.

1.2 The Impact of Carbon Tax on Environment

The impact of carbon tax on environment would be that the demand of the most carbon contains elements decrease. Second, the growth rate of the emissions of carbon dioxide and other greenhouse gases also decrease, and in the electricity, generation sectors also, which is relatively quite high shows low results. The public's acknowledgment of an unnatural weather change has driven legislators around the globe to arrange ozone harming substance decreases. People will likely hear a couple of lawmakers propose a duty on carbon - or in some cases all the more extensively, an assessment on the discharges of petroleum derivatives. Be that as it may, before "tax" sets off alerts, think about the impact of combusted non-renewable energy sources on the climate. They cause ground-level ozone, corrosive downpour, worldwide environmental change and a bunch of different issues. Carbon charge is one of two significant market-based choices to bring down discharges, the other being cap-and-exchange plans. While cap-and-exchange appears to have prevailed upon most lawmakers, numerous financial specialists and shoppers incline toward carbon charge for its straightforwardness and unprejudiced nature.

Carbon charge is a type of contamination charge. It imposes an expense on the creation, dissemination or utilization of petroleum products dependent on how much carbon their burning discharges. The administration sets a cost for each ton on carbon, at that point makes an interpretation of it into a duty on power, petroleum gas or oil. Since the duty makes utilizing grimy energizes more costly, it supports utilities, organizations and people to diminish utilization and increment energy effectiveness. Carbon charge additionally makes elective energy more cost-serious with less expensive, dirtying powers like coal, flammable gas and oil.

VIII. THE ECONOMIC EFFECTS

Economists argues that carbon tax is the most efficient way to control climate change, with the minimum unfavourable effects on the economy. As the expense of utilizing petroleum products raised, a carbon assessment would will in general

build the expense of creating merchandise and ventures—particularly things, for example, power or transportation, that include moderately a lot of carbon dioxide emanations. Those cost increments would give a motivator to organizations to make their items in manners that brought about less carbon dioxide outflows. Higher creation expenses would likewise prompt greater costs for outflow escalated products and enterprises, which would urge family units to utilize less of them and a greater amount of different merchandise and ventures. Without representing how the incomes from a carbon expense would be utilized, such a duty would negatively affect the economy. The more exorbitant costs it caused would lessen the buying intensity of individuals' income, adequately decreasing their genuine (expansion changed) compensation. Lower genuine wages would have the net impact of lessening the sum that individuals worked, hence diminishing the general flexibility of work. Speculation would likewise decay, further lessening the economy's complete yield.

The expenses of a carbon assessment would not be equitably appropriated among U.S. family units. For instance, the extra expenses from more exorbitant costs would burn-through a more prominent portion of salary for low-pay families than for higher-pay families, since low-pay family units for the most part spend a bigger level of their pay on emanation concentrated merchandise. Essentially, laborers and financial specialists in emanation concentrated enterprises, who might see the biggest decline sought after for their items, would probably bear generally enormous weights as the economy changed in accordance with the expense. At last, zones of the nation where power is created from coal—the most discharge concentrated petroleum derivative per unit of energy produced—would will in general experience bigger increments in power costs than different regions would.

IX. DISCUSSION AND LIMITATIONS

In this part of the research, the discussion has been provided on which on should prevail, the ETS or the Carbon tax provided by the legislation. second part will be on the introduction of the carbon tax in the developing countries.

1.3 Emissions Trading System V. Carbon Tax

The existing legislation on the carbon taxation has explained above, one of the sources stated that, Emissions Trading System is seemed to be going opposite to the uniform tax rates fixed by the policy makers. However, both the approaches are of imposing price on carbon and contents, but

the legislation unanimously imposes tax on the emissions of carbon dioxide. Whereas the price in an Emissions Trading System (ETS) is decided by the market. There are two key aspects that has to be discussed in furtherance to this. First, the government in giving more implementation to ETSs rather than tax, and second, which one should be prevail in both terms, economic and environmental. According to the World Resources Institute, both the approaches are fair enough in their respective place for reducing the carbon emissions. ETS politically sets as priori as it has the advantage because they provide certainty on the quantity emitted and the tax provides security for producing emissions for industry. Therefore, if there will be an election on both the approaches, the voters will try to vote for that approach which provides highest use for them. For that the decision makers pass the legislation which will be more reliable for the environment and human beings. and so, the government will try to opt for that approach which induces price as less as possible.

1.4 Global Effects and The Problem of Free Riding

The global effects regarding the carbon taxation would be the problem of 'free riding', which means that some of the worldwide countries do not take participation in the international treaties and still taking them for granted. It was observed by the international policy makers that, "The introduction of carbon taxes in a few countries could lead to the unintended outcome that other countries will make use of their comparative advantage and ultimately, to an increase in the global output of emissions. This outcome would be opposite of the original goal. One way to counter those effects is to sustain international competitiveness by imposing 'carbon tariffs' on energy intensive goods from countries abroad. Such a measure is, of course, required to go in line with international provisions on trade, such as legal framework states have imposed on themselves through the World Trade Organisation (WTO).

X. CONCLUSION

Through this paper, it is concluded that the carbon taxation plays a vital role for achieving the goals of sustainable development. Carbon tax is imposed on the carbon contents including carbon dioxide. However, carbon dioxide should not be included because the production of carbon dioxide is somehow a natural process as humans exhales it also trees use it for the process of photosynthesis. But carbon dioxide also releases in a large amount from the factories and industries, and the

greenhouse gases consumes carbon dioxide, and the effect of greenhouse gas emissions is harmful for the environment and living organisms. So, carbon tax has to be imposed on carbon dioxide as well. Nowadays, as per the increase in the pollution, it is very important for India, in fact for the world to achieve the sustainable development goals and according to the economist and after the study on carbon tax and sustainable development, imposing tax on carbon and carbon contents and elements, from fossil fuels and anthracite or lignite coal to heating oil and natural gas, howsoever, precisely known, which has to be paid by all the emitters who emits carbon contents highly in amount, is considered as one of the best ways amongst all.

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