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Conceptualizing the Model E-GST: A Case for Environmental Taxation in India

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Abstract

The excessive generation of Green-house gases and its disastrous release into the unprotected, fragile ecosystem has reached alarming proportions on a global scale. The studies conducted in 2021[1] by the International Monetary Fund (IMF) have underlined the inadequacy of efforts put in thus far. Further, the studies also reveal that the gaps can be supplemented with introduction of eco-taxation on a universal level, not just parochially. It is our hypothesis that the introduction of Eco-taxation (on industries) can be helpful in reducing all types of pollution including the ones related to air and water. Apart from generating eco-awareness in the masses, the proposed model E-GST (Environmental Goods and Service Tax) can be instrumental in incorporating the much-needed changes in the existing taxation structure and thereby bring pollution formally under a taxation regime that supports the polluter-pays principle. The methodology will involve ENVEEN Model (Environment Energy Economy Model) engaging with *de-novo* approach of environmental taxation.

Keywords: Eco-taxation; EGST (Environmental Goods and Services Tax); Model Taxation; Environmental pollution; the polluter pays

1. Introduction

With its carbon-generating features, the manufacturing sector has been known to have affected the environment adversely, specifically by way of causing the green-house gases effect and climate change among others. Unavailability of an effective legal instrument in the taxation structure poses a crucial handicap towards accomplishing the ecological targets thus only further compounding the problem. The manufacturing sector has historically had a significant impact on the ecosystem and bio-diversity due to its carbon emissions, waste generation, and resource consumption. Processes like burning fossil fuels for energy, using chemicals in production, and generating waste products and their unscientific process of disposal majorly contribute to air and water pollution, deforestation, and habitat destruction. It is argued that energy consumption varies directly with population increase (John,Paul 1974). India will be under tremendous pressure to increase its energy demand to meet its overriding social and economic obligations due to burgeoning population. Therefore, environmental conservation by mitigating effects of various effluents and pollutants becomes inevitable. Taxation proved to be a deterrent towards reducing the energy demand by improving energy intensity. In Europe, fuel demand would have been twice if it had not followed the policy of high fuel taxation (Sterner 2007). In European Union (EU), it was found that industries that reduce pollution increase its resource productivity and switch to renewable sources is highly encouraged. In Turkey, a second dividend of environmental taxation, that is economic benefits in addition to environmental improvements, shows potential when imported fuels are primary source of pollutant (Gurkan 2003).

However, there are increasing efforts within the society, industry and community to adopt sustainable practices, such as using renewable energy sources, reducing waste through recycling and reusing materials, and implementing cleaner production technologies. These initiatives aim to mitigate the environmental impact of manufacturing activities and promote a more sustainable approach to industry. In the modern times, environmental degradation and sustainability have become pressing concerns globally, with India being no exception –rapid and often blind industrialization based on the solely profit-making motives, unplanned and un-scientific urbanization combined with population growth have led to

[1] Tax policy and climate change International Monitory Fund, April 2021 Italy

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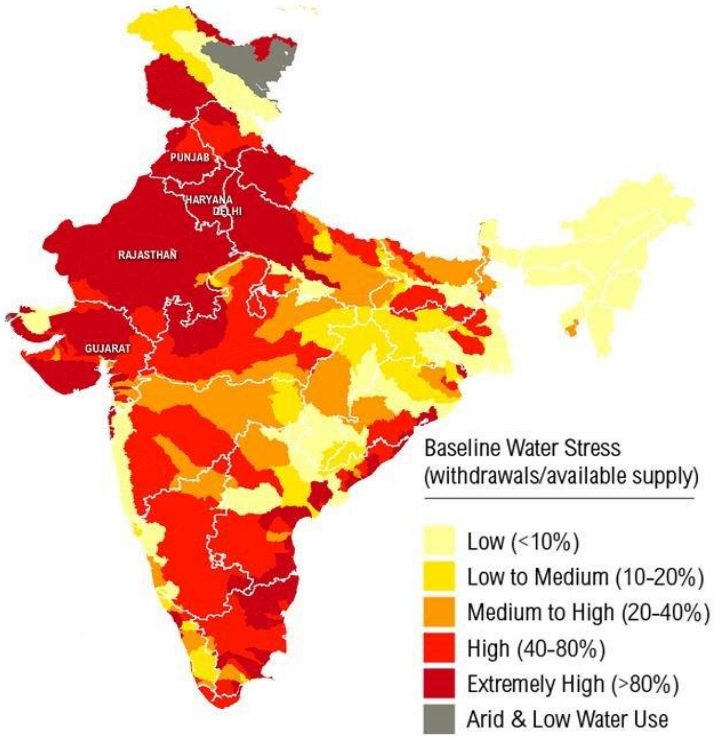
increased pollution even the scarcity of precious natural resources, and ecological imbalances. In this regard, it is pertinent to quote at length what was published in the *Indian Express* (March 28, 2024) which writes:

'Bengaluru is experiencing its worst water crisis in decades. The weak monsoon last year has compounded an already difficult situation caused by unregulated urban growth and depleting groundwater resources. Chennai too has experienced shortages in recent years. Several other Indian cities are under similar stress, indicating that water supply is rarely factored in urban planning. It's also worrying that a large section of India's urban population does not receive safe drinking water. Last month, the Peya Jal Survekshan revealed that only 10 per cent of Indian cities meet drinking water standards. The quality of water is known to deteriorate in the distribution network because of multiple factors compounds from old pipes releasing into the water, sediment buildup and the accumulation of pathogens. This is a concern in several places, including developed countries. The problem gets compounded in Indian cities because of leaky pipes, many of which are close to sewer lines.

It is believed by the scholars that this is due to huge economic development pressure among developing nation to address increased need of people, where resources are scare (Narula and Dunning 2000).

2. Concept of Environmental Goods and Services Tax in India

The concept of Environmental Goods and Services Tax (EGST) in India is rooted in the recognition of the need for a holistic approach to environmental management and fiscal policy. EGST aims to incentivize the production and consumption of environmentally friendly goods and services while discouraging activities that contribute to environmental degradation. The development of EGST in India is situated within the broader policy context of taxation reform and environmental governance. It requires a robust legislative framework that aligns with national environmental goals, international commitments (such as the Paris Agreement), and economic objectives. Several countries have implemented variations of environmental taxation, including taxes on carbon emissions, energy consumption, and waste disposal. Case studies from countries with successful EGST models can provide insights into implementation strategies, revenue generation, and environmental outcomes. The success of EGST in the country hinges on stakeholder engagement, including government agencies, businesses, environmental organizations, and the public. Building awareness about the rationale, benefits, and implications of EGST is crucial for gaining public acceptance and support.



Source: Kansal et al, 2017

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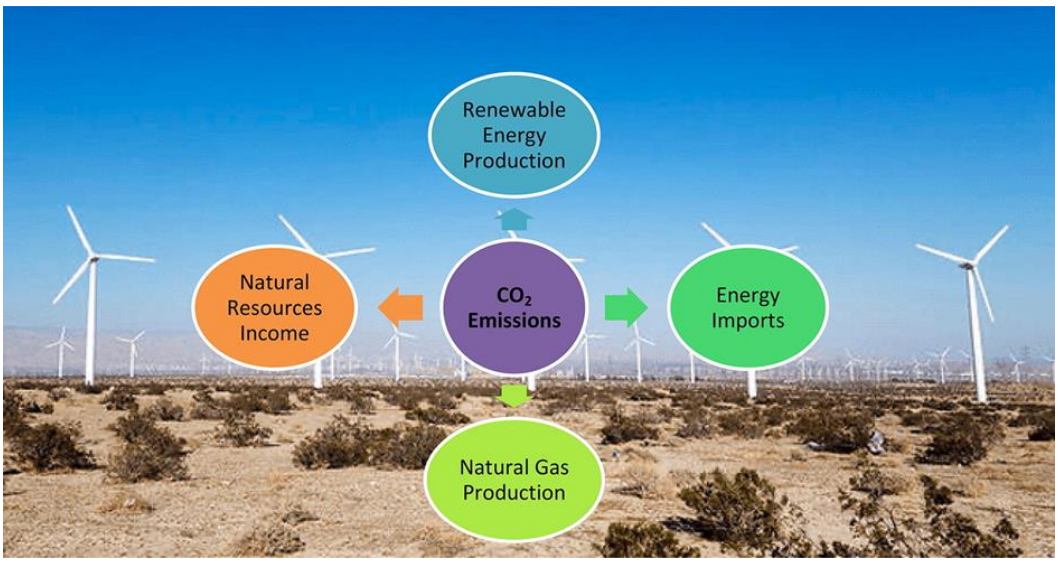
2.1 In this context, the concept of a taxation based on environment has acquired attention as a policy tool towards internalizing environmental costs, promoting sustainable practices, and mitigating negative effects. This new concept has been referred to as Environmental taxation which precisely addresses the same problem and aims at minimising the environmental costs associated with production, consumption, and waste generation and its scientific disposal. The top most populous country of the world India [2]is not an exception. As of now, India has occupied the apex position in terms of population. In this context, a key aspect of sustainable development is the promotion of environmental taxation also for the renewable energy sources for such a huge population. As the world faces the challenges of climate change and depleting fossil fuel reserves, it is crucial for India too to shift towards cleaner and more sustainable forms of energy which unlike the traditional sources, can reduce greenhouse gas emissions which degrade the environment in unprecedented ways (Mensah, 2019). This is amply clear from the following figure:



Source : Pan et al, 2024

3. Principles governing Environmental Taxation

Environmental Taxation operates on the principle of "polluter pays," wherein those responsible for environmental harm bear the costs of harming the environment which directly affects the bio diversity. In this context, it is relevant to mention that this taxation system also involves promoting energy efficiency and conservation measures by adopting energy-saving technologies, improving energy infrastructure and raising awareness about the importance of energy conservation. Studies have indicated a significant reduction in energy consumption while generating minimal impact on the production of energy (Saqib et al., 2021).

3.1 The origin and evolution of environmental taxation dates back to the early 20th century, with the introduction of taxes on pollution emissions and natural resource extraction in several countries. Most of the environmental problems, can be mitigated by the well-designed fiscal policies like emissions taxes or their cap-and-trade equivalents with allowance auctions are the most natural instruments to prevent environmental damages. Environmental taxes, that are, as conceptualised, justified on environmental grounds may have been a significant source of government revenue in future and have a deterring effect on the use of environment.

3.2 Environmental taxation refers to a fiscal policy tool designed in such effective and the efficient way to handle environmental. It operates on the principle of "polluter pays,[3]" aiming to give the optimum benefit to environmentally friendly behaviour while discouraging activities that harm the environment. The purpose of environmental taxation is

[2] https://www.statista.com/statistics/262879/countries-with-the-largest-population Accessed 01 May 2024.

[3] M.C. Mehta vs Kamal Nath & Ors on 13 December, 1996

having vide dimensions and includes several key objectives. One of the primary purposes of environmental taxation is to balance the environmental costs associated with environmental pollution, resource depletion, and ecological damage. By calculating these costs in the currency value as the prices of goods and services. Environmental taxation aims to ensure that polluters bear the true cost of their activities. As the Greek philosopher Plato says

'If anyone intentionally spoils the water of another ... let him not only pay damages, but purify the stream or cistern which contains the water'.[4]

3.3 Plato recognised that water could be both privately and commonly owned; compensation would be payable by the water-polluter in both events, and this person could further be required to rectify the damage done. Basically, Polluter Pays Principle is an up-to-date reformulation of an idea that has been around some time but the modern Polluter Pays concept was developed by the Organization for Eco nomic Co-operation and Development (OECD) during the 1990s and was first widely discussed in the United Nations Conference on Environment and Development held in Rio de Janeiro of Brazil in June 1992. The best suited example of this principle in practice is the American "Superfund" legislation. Despite the fact that Polluter Pay Principle was publicised by early conservationists as a means to reduce ecological pollution, still many consider it as a 'vague idea'. Some put forward their argument that under this principle a polluter fulfils his obligations when he pays at least some of administrative expenses of the agencies who regulate pollution activities.

3.4 Exxon Valdez'[5] case is the best example of this criterion of Polluter Pays Principle. In 1989, an oil tanker owned by Exxon spilled out over 300,000 barrels of crude oil into the sea and caused significant environmental hazard. Exxon was forced to pay $125 million in fines to the federal government and the state of Alaska and $900 million into a fund for environmental projects controlled by government, for habitat protection, bio diversity and scientific research. A group of the researchers argue that it can only be satisfied by polluters when they will pay the total depollution cost while other supports the view that tax (like 'Carbon Taxes' 'EGST') should be legitimised on the users of the natural resources that cause atmospheric hazards.

5. Considering and synthesising the views as cited we will use an appropriate methodology that will involve ENVEEN Model (Environment Energy Economy Model) engaging with de-novo approach of environmental taxation (Qaum et al,2016). However, we will limit our study in the horizons of Indian Goods and Services Tax Act 2017 (which will be referred to as GST hereafter). Conceptually, the Environmental taxation in India will seek to encourage businesses and individuals to adopt sustainable production and consumption practices by imposing taxes on environmentally harmful activities (e.g., pollution emissions, resource extraction), governments incentives the adoption of cleaner technologies, efficient resource use, and pollution prevention measures. Under the aegis of the GST, the environmental taxes can serve as a source of government revenue, which can be earmarked for environmental protection initiatives, conservation projects, and sustainable development programs. This revenue generation aspect helps finance environmental policies and investments while reducing the burden on traditional tax sources. Environmental taxation can influence consumer behaviour and choices too. Higher taxes on environmentally harmful products (e.g., fossil fuels, plastic products) can encourage consumers to shift towards greener alternatives, such as renewable energy sources, eco-friendly products, and sustainable transportation modes. It is also known to have spurred innovation and technological advancements in clean technologies and green solutions (Tii N *et all* , 2023). Businesses will be motivated to invest in research and development of environment friendly products and processes to reduce their tax liabilities and gain competitive advantages in a greener market. Through the financial disincentives imposed by environmental taxes, the governments aim to reduce pollution levels, protect natural resources, and improve overall environmental quality. This proposed environmental taxation aligns with international agreements and commitments related to environmental protection and climate change mitigation while duly contributing to public health benefits, biodiversity conservation, and ecosystem resilience. Many countries implement environmental taxes as part of their strategies to meet targets set under agreements such as the Paris Agreement and

[4] The Dialogues of Plato: The Laws, vol. 4, book 8, section 485(e), translated by Jowett B, Oxford: Clarendon Press (4th ed.), 1953.
[5] https://darrp.noaa.gov/oilspills/exxonvaldez#:~:text=What%20Happened%3F,environmental%20disasters%20in%20U.S.%20history Accessed 02 Dec 2024.

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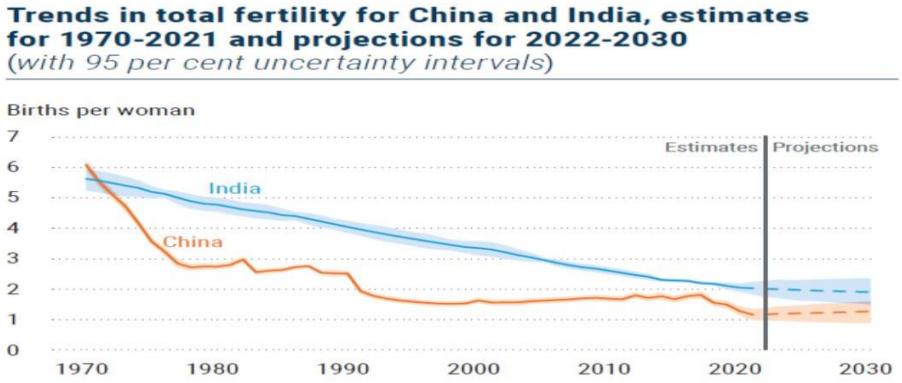
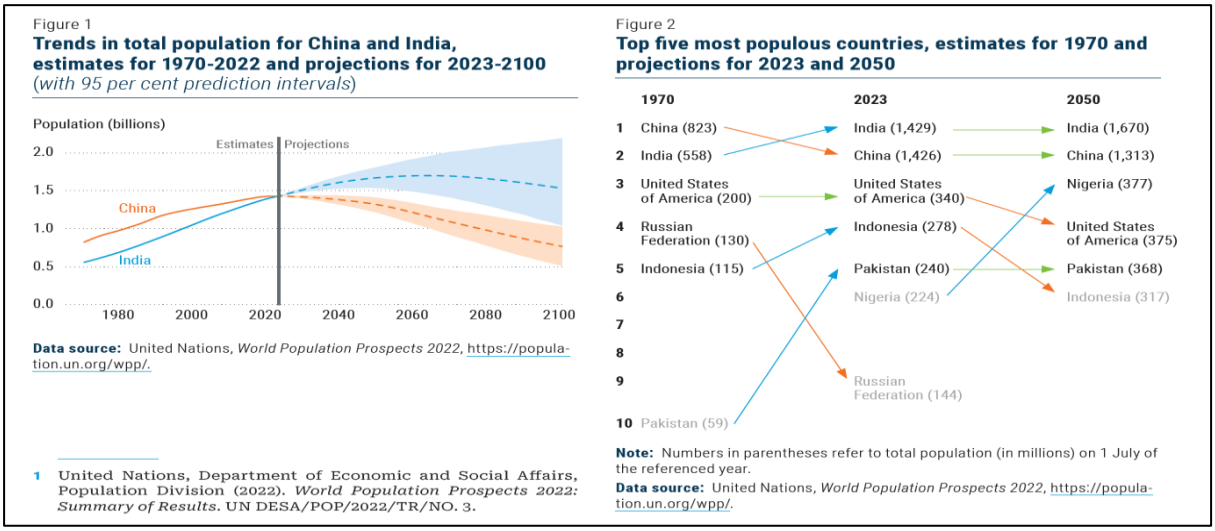
Sustainable Development Goals (SDGs)[6]. In essence, environmental taxation serves as a policy instrument that integrates economic considerations with environmental objectives, aiming to achieve sustainable development, mitigate environmental impacts, and promote a transition towards a greener and more resilient economy.

5.1 India faces a myriad of environmental challenges due its population, India does have apex position in the population pyramid (McDevitt 1996). The trajectory of the Indian population up to year 2030 vis a vis the second populus country the republic of China as follows:



Source https://www.un.org/development/desa/dpad/publication/un-desa accessed 05 May2024.

5.2 It is important to keep in view that India occupies 2.4% of the world's land area with its 3.28 million square kilometre area even while holding as huge as 17.5% of the world's population. If we compare the trends with the Republic of China and the top five most populus countries of the world the picture is as follows-



5.3 The industries have been exerting direct impact on the environment as well as on the bio diversity including air pollution, water scarcity, deforestation, and waste management issues. It is argued that energy consumption varies directly with population increase (John and Paul 1974). Population challenges make exacerbated and rapid economic growth, urbanization, and industrial activities. The need for sustainable development strategies that balance economic growth with environmental protection has become imperative. If the take the example of coco cola huge amount of water is used as mainly as ingredient in its different beverages, as well as canning, bottling, sterilisation and transportation of Coca Cola products across the world. On an average, it takes approximately anywhere between 1.5 litres to 3 litres of water to make one litre of Coca Cola[7]. This is not only one example that we are depleting the natural resources vis a vis Industrialization.

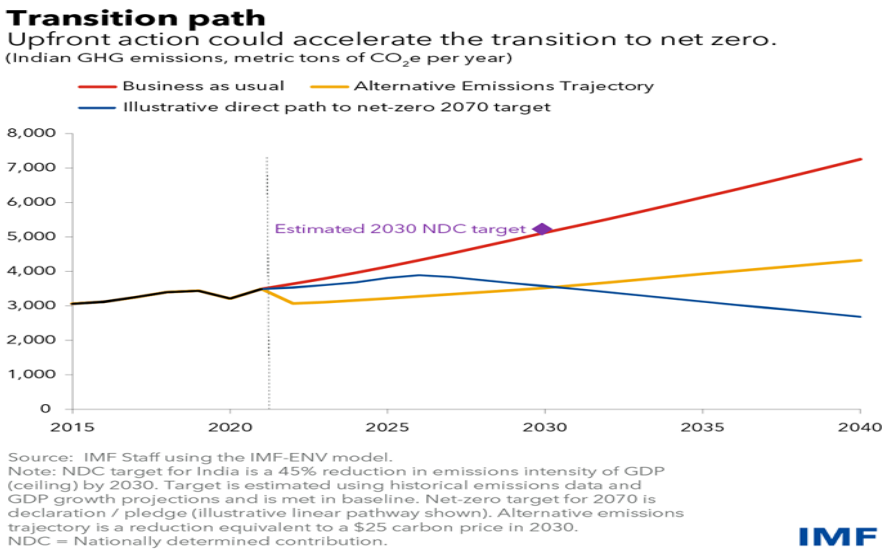
[6] The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs)

[7] https://www.coca-cola.com/in/en Accessed on 03 Dec 2024

The major cities of the India are facing water problem due this free use of natural resources by Industries. The country that pumps more groundwater than any other has reached a water supply and food safety reckoning that threatens to upend political and economic stability, and long-term public health[8].

6. Research Objectives

This research aims to analyse the concept of Environmental Goods and Services Tax (EGST) and its relevance in the Indian context, assess the potential economic, environmental, and social impacts of EGST implementation and identify challenges and opportunities in designing and implementing an effective EGST framework apart from proposing policy recommendations and strategies for successful EGST adoption in the country. An attempt has also been made to examine EGST through a multidisciplinary lens encompassing economics, environmental science, policy analysis, and taxation theory, this research seeks to contribute to the ongoing discourse on sustainable development and green taxation strategies in India. The primary objective of this study is to delve into the theoretical underpinnings of EGST as a taxation mechanism aimed at promoting environmental sustainability. This involves understanding the principles, features, and potential applications of EGST within the broader framework of environmental taxation, also to Evaluate the Relevance of EGST in the Indian Context: Another objective is to assess the applicability and suitability of EGST within the socio-economic and environmental context of India. This includes analysing India's environmental challenges, tax structure, and policy landscape to determine the potential benefits and challenges associated with EGST implementation. This structured approach ensures a comprehensive exploration of the topic, covering theoretical foundations, empirical evidence, case studies, policy implications, and future research directions related to Environmental Goods and Services Tax (EGST). Each section contributes to a holistic understanding of EGST and its potential as an innovative taxation approach for environmental sustainability and economic development. The long-term objective of this research will have following bearings on the XY axis graphical representation which is trmed as Transition path.



7. Methodology

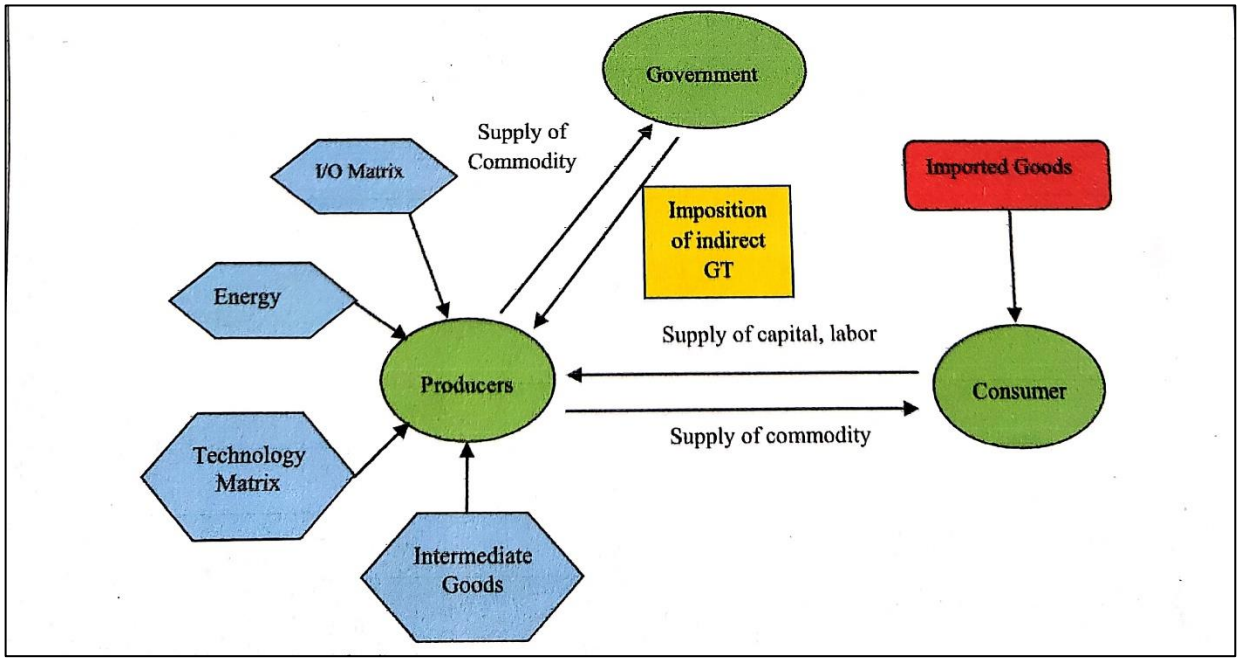
The proposed model with its unique potentiality to impact the working culture of the manufacturers by design, it will instil a sense of environmental responsibility in them it will also serve as a major catalyst in the area of bio-diversity. While scientists and environmentalists have been engaged in their endeavours towards warding off such environmental catastrophes, new forms of taxation could be another such tools with the help of which the harmful effects of such phenomena can be effectively mitigated. The presented model is primarily based on triad of environment-energy-economy (ENVEEM) model (Gurkan 2003) in conjunction with de-novo approach of environ mental taxation. Former is dynamic CGE modelling based on interaction among the triads (Fig. 1) while the latter is formulation of integration of TERI

[8] https://www.circleofblue.org/indiawater/?gad_source=1&gclid=CjwKCAjwrvyxBhAbEiwAEg_Kgt7MKR Accessed on 03 Dec 2024

guideline with proposed environmental taxation policy . CGE is the principal analytical tool offered for conducting economic analyses of energy, economy and the environment. There exist two simultaneous equilibriums of '*government to producers*' and '*producers to consumers*' . In first equilibrium, supply of commodity and green tax imposition with revenue is an input from various sectors such as energy, technology matrix; intermediate goods etc. while in second equilibrium; supply of capital, labour and supply of commodities play a key variable role. ENVEEM mode(*ibid*) involves parallel interaction of consumer to government via producers. While highlighting the importance of green engineering and other endeavours, this study will focus on the impact of eco-taxation on the environment under the aegis of Goods and Services (GST) Act 2017.

8. ENVEEM (CGM) Model with DE-NOVO

This model deals with the dynamic equilibrium of ENVEEM triads. Economic benefits are accrued because of adoption of efficient and effective tools to use which leads to environment improvements. Prima facie, the blind and mindless industrialization at the cost of environmental damage contributes may seems to have good economic benefit. It may be true in short term but this model of the economy fails miserably in long run. Without taking environment in the consideration the post-industrialization ill effects are having bigger dividends. Dynamic equilibrium between environment and economy must be accounted by considering long term sustainable goals. The circumstance as of now, in the world as a whole and the India in particular Environmental Goods and service taxation will be introduced as external variable to control indiscriminate use of natural resources for longer eco-viable benefits. It acts as a catalyst for producer-government-Industry equilibrium which in turn affects producer–consumer equilibrium, simultaneously. Environmental Goods and Service Tax (EGST) is also a key binding element for these two models towards developing the integrated approach.



Source: Quam et al,2016

9. Research Gap and the Environmental Goods and Services Tax (EGST) in India

The question is how to deal with environmental tax reform within the framework of the Goods and Service Tax remains unanswered. Many countries of the world those who apply VAT have also begun to think about imposition of the environmental tax . At present, India stands at minimal performance in the international frame work of environmental taxation but certainly it stands above the United States which has no concept of green tax (Fullerton et al. 2008). India has to choose a suitable design by learning from others experience with indigenous mechanism in the indirect tax domain so that we can well integrate all indirect taxes but despite of all the environmental tax could not be coordinated with Goods and Service Tax. The concept of EGST is a comprehensive approach that will subsume all the environmental taxes which are prevalent by different name in the India.

9.1 The concept of EGST will have a proper mechanism which will be administered simultaneously with Goods and Services tax, it will also use the platform of the Goods and Service Tax Network (GSTN) for better compliance and the proper monitoring of the environmental taxes. This aims to promote the green economy and support sustainable consumption and production patterns while serving specific objectives, ranging from reducing pollution and resource depletion to promoting renewable energy, waste management, and conservation. Worldwide Governments often use a combination of these taxes and incentives to address environmental challenges and encourage the transition towards a more sustainable and resilient society. These combination of the taxes often give negative impetus to the mindset of the public by and large as they are numerous in the number so it is the need of the hour that Environmental taxation should be collected in with GST . Environmental taxation has become a prominent policy tool worldwide to protect the environment and the bio-diversity. European commission (EC) and Organization for Eco nomic Co-operation and Development (OECD) in 2001 defined environment taxation as

"*A tax whose base is a physical unit of something that has specific negative impact on the environment*".

It is argued by the scholars that EGST does have the negative impact on the trade and business by and large[9] . If we critically examine the arguments then we find that these scholars are not taking in account of reflecting growing concerns about climate change, pollution, resource depletion, and sustainable development. Several global trends are shaping the landscape of environmental taxation. Many countries and regions are adopting carbon pricing mechanisms, including carbon taxes and cap-and-trade systems. Carbon taxes impose a direct price on carbon emissions, incentivizing emission reductions and clean energy investments. Cap-and-trade systems set emission caps and allow trading of emission permits, creating market-based incentives for emission reductions. Energy taxes, particularly on fossil fuels, are being expanded and adjusted to reflect environmental considerations. Governments are under the pressure of increasing taxes on high-carbon energy sources while providing incentives or tax breaks for renewable energy production and energy efficiency measures.

9.2 There is a growing trend towards implementing pollution taxes targeting specific pollutants such as sulphur dioxide, nitrogen oxides, and particulate matter. These taxes internalize the external costs of pollution, encourage pollution abatement technologies, and fund environmental cleanup efforts. Taxes on waste generation, disposal, and landfilling are being introduced to promote the circular economy. There needs to be an indigenous mechanism to curb environmental degradation. Inadequate taxation is designed merely on vehicular pollution and not on the various industries which are major contributor to environmental losses be in term of effluent discharge to the water bodies or to the atmosphere directly (Srivastava and Rao 2010). The proposed tax will promote waste reduction, recycling, and the use of recycled materials, contributing to resource conservation and reducing environmental impacts. Water taxes are being implemented now to address water scarcity, promote efficient water use, and fund water infrastructure projects. Resource extraction taxes target the depletion of natural resources, encouraging sustainable resource management practices and conservation. Many cities and regions are implementing transportation taxes, including fuel taxes, vehicle emission taxes, road tolls, and congestion charges. These taxes aim to reduce traffic congestion, promote public transit, and incentivize fuel-efficient vehicles and alternative transportation modes. Governments are using tax incentives and rebates to promote green investments, sustainable technologies, and eco-friendly practices. Efforts such as the Paris Agreement, the Kyoto Protocol, and the European Union's Emissions Trading System (EU ETS) facilitate cooperation on carbon pricing and emission reduction strategies. The proposed EGST will cater all the gaps which is having individualistic in nature and their implementation is cumbersome.

10. Taxes are to be subsumed in the proposed EGST

It is widely argued by many environmentalist and renowned economists that pollution levies are an efficient instrument for environmental objectives (Baumol and Oates 1988). Both simulation models and practical experiences indicate that Green Tax (GT) could be effective in reducing potential environ mental impacts (Symons et al. 1994) and there is a visible impact of green shift in taxation (Srivastava and Rao 2010). In the proposed model of the EGST we will have green shift in the taxation by subsuming the taxes as mentioned below:

[9] https://www.grantthornton.global/en/insights/articles/esg-tax-2023---environmental-taxes/ Accessed 07 Dec 2024

10.1 Carbon Taxes: Carbon taxes are levied based on the amount of carbon dioxide (CO2) emissions produced by activities such as burning fossil fuels (e.g., coal, oil, gas). The aim is to reduce greenhouse gas emissions and combat climate change by pricing carbon emissions, thereby incentivizing businesses and individuals to reduce their carbon footprint.

10.2 Energy Taxes: Energy taxes are imposed on the consumption or production of energy, including electricity, gasoline, diesel, and natural gas. The tax rates may vary based on the energy source's environmental impact, with higher taxes on fossil fuels to encourage the shift towards renewable energy sources and energy-efficient technologies.

10.3 Pollution Taxes: Pollution taxes target specific pollutants released into the environment, such as air pollutants (e.g., sulphur dioxide, nitrogen oxides) and water pollutants (e.g., industrial effluents, chemical contaminants). These taxes aim to internalize the external costs of pollution, reduce emissions, and promote pollution control measures.

10.4 Waste Taxes: Waste taxes are imposed on the generation, disposal, or management of waste materials, including solid waste, hazardous waste, and electronic waste (e-waste). The purpose is to incentivize waste reduction, recycling, and proper waste management practices, encouraging the circular economy and resource conservation.

10.5 Transportation Taxes: Transportation taxes include taxes on fuels (e.g., gasoline, diesel) used for vehicles, vehicle registration fees, road tolls, and congestion charges. These taxes can influence travel behaviour, promote public transit use, reduce traffic congestion, and encourage the adoption of fuel-efficient vehicles and alternative transportation modes.

10.6 Water Taxes: Water taxes are levied on water usage by households, industries, and agricultural activities. The goal is to promote water conservation, efficient water use, and sustainable water management practices, especially in regions facing water scarcity or quality issues.

10.7 Resource Extraction Taxes: Resource extraction taxes apply to the extraction, depletion, or use of natural resources such as minerals, timber, and water resources. These taxes encourage sustainable resource management, discourage overexploitation, and support conservation efforts.

Imposition of proposed EGST will be a de-novo approach developed in the current work is based upon Environmental Impact Assessment (EIA) of a project based on the criteria established by the Energy and research institute (TERI), New Delhi (Qayum and Gupta 2014). TERI has developed '*Green Rating for Integrated Habitat Assessment'* system which is an evaluation tool and maintains a resource efficient built environment (GRIHA 2010).

Present global trends indicate a shift towards more comprehensive and integrated approaches to environmental taxation, emphasizing the role of fiscal policy in achieving environmental sustainability and mitigating climate change impacts. The global pressure acting inward and India's moral obligation to reduce the emission level makes this study much more relevant and it adopts integrated modelling by considering energy–economy–environment dynamics together of computable general equilibrium (CGE) model (Qaum *et al,2016*). Governments, businesses, and stakeholders are increasingly recognizing the importance of aligning economic incentives with environmental objectives to foster a greener and more resilient future.

11. Conceptual Framework of Environmental Goods and Services Tax (EGST)

EGST is a form of taxation specifically targeting goods and services that have positive environmental impacts or contribute to sustainability. It involves applying a tax on products or services that are environmentally harmful while providing incentives or exemptions for those that are environmentally friendly. EGST aims to internalize environmental costs, promote sustainable consumption and production, and drive innovation in green technologies and practices. EGST will subsume multiple taxes which are now prevalent as of now based on the environmental impact like carbon tax, water tax and so on. EGST will encourage consumers and businesses to opt for environmentally friendly options by making them more economically attractive through tax breaks or reduced tax rates. The revenue generated from EGST can be earmarked for environmental conservation, climate change mitigation, renewable energy projects, and other green initiatives. EGST will requires effective monitoring mechanisms to ensure compliance, prevent tax evasion, and track the environmental impact of taxed products and services. By making environmentally friendly options more affordable, EGST will

incentivizes consumers to choose sustainable products and services, leading to reduced environmental impact. EGST will encourage businesses to invest in research and development of green technologies, eco-friendly products, and sustainable practices to stay competitive in a greener market.

11.1 The revenue from EGST can be used to fund environmental protection programs, conservation efforts, renewable energy infrastructure, and climate change adaptation measure. Designing a comprehensive EGST framework requires defining criteria for environmentally friendly products, determining tax rates, and addressing potential loopholes or unintended consequences. Some industries or businesses may resist EGST due to concerns about increased costs, market competitiveness, and administrative burdens. Ensuring compliance and preventing tax avoidance schemes requires robust enforcement mechanisms, transparency, and collaboration between government agencies and businesses. Building public awareness about the benefits of EGST, addressing misconceptions, and garnering public support will essential for successful implementation.

12. Potential Impacts of EGST:

Environmental Benefits: EGST will lead to reduced pollution, resource conservation, improved waste management practices, and incentivize the adoption of sustainable technologies. EGST will spur growth in green sectors such as renewable energy, green building materials, eco-friendly products, and sustainable agriculture. The revenue generated from EGST can be reinvested in environmental projects, climate change mitigation, and sustainable development initiatives, contributing to long-term economic and environmental sustainability. Overall, understanding EGST requires a comprehensive analysis of its design, implementation strategies, stakeholder engagement, potential impacts, and continuous evaluation to ensure its effectiveness in promoting environmental sustainability and economic development.

12.1 Integration of Environmental Taxes and Fiscal Policies: There is a growing recognition of the need to integrate environmental objectives into fiscal policy frameworks. Environmental tax reforms are being designed to align with broader economic goals, revenue generation needs, and sustainable development agendas. International monitory Fund always strive the best to take the environmental issues on its agenda point[10].Happiest country of the world Denmark targets households first, increasing taxes on waste and recycling sales through income tax. Denmark targets households first, increasing taxes on waste and recycling sales through income tax cuts[11].

13. Rationale for Introducing EGST in India

Environmental Goods and Services Tax (EGST) in India will based on several compelling rationales that align with the country's environmental and economic goals. EGST aims to internalize the external costs associated with environmental degradation caused by production, consumption, and waste generation. By imposing taxes on environmentally harmful goods and services, EGST ensures that the true cost of environmental damage is borne by the polluters, thus promoting the principle of '*polluter pays*. EGST incentivizes the production and consumption of environmentally friendly goods and services by providing tax breaks, exemptions or lower tax rates for eco-friendly products. This encourages businesses and consumers to adopt sustainable practices, invest in green technologies, and reduce their ecological footprint. This tax will foster innovation in green technologies, renewable energy, waste management solutions, and sustainable practices. Businesses will be motivated to develop and adopt eco-friendly alternatives to minimize their tax liabilities and gain competitive advantages in a green economy. The revenue generated from EGST can be earmarked for environmental conservation, climate change mitigation, pollution control measures, and green infrastructure projects. This creates a dedicated funding source for sustainable development initiatives and environmental protection programs.

13.1 EGST will aligns with India's international commitments and obligations under agreements such as the Paris Agreement and Sustainable Development Goals (SDGs). This model of the taxation supports India's efforts to reduce greenhouse gas emissions, combat climate change, and achieve sustainable development targets. This will create market incentives for businesses to produce and supply green products and services by making them more economically viable

[10] Tax policy and climate change IMF/OCD April 2021, Italy

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compared to environmentally harmful alternatives. It will stimulate demand for eco-friendly products and expands the green market segment. EGST will addresses market failures and externalities associated with environmental pollution, resource depletion, and ecosystem degradation. By incorporating environmental costs into the pricing mechanism, it will encourage businesses and consumers to make informed choices that consider environmental impacts.

13.2 It is argued here that EGST contributes to better environmental governance by integrating environmental considerations into fiscal policy frameworks and promotes cross-sectoral collaboration, policy coherence, and synergy between environmental objectives and economic incentives. Overall, the rationale for introducing EGST in India revolves around fostering sustainable development, reducing environmental impacts, promoting green technologies and innovation, generating revenue for environmental initiatives, and aligning with global sustainability goals. EGST serves as a strategic tool to incentivize green behaviour, drive market transformation, and contribute to India's transition towards a low-carbon, resource-efficient, and environmentally sustainable economy.

14. Implementation of Economic and Environmental Impacts of EGST in India

The implementation of Environmental Goods and Services Tax (EGST) in India is expected to have significant economic and environmental impacts, shaping various sectors and influencing consumer behaviour. Following will be the anticipated economic and environmental impacts of EGST

Economic Impacts of the model tax in revenue generation will be substantial for the government, particularly if applied to a wide range of goods and services with varying tax rates based on their environmental impact. This revenue can be earmarked for environmental conservation, renewable energy projects, green infrastructure, and sustainable development initiatives. This model will create market incentives for businesses to invest in green technologies, eco-friendly products, and sustainable practices. Companies may allocate resources towards research and development of environmental solutions to reduce their tax liabilities and gain competitive advantages in a growing green market's. Job Creation: The transition towards green industries and sustainable practices driven by EGST can lead to job creation in sectors such as renewable energy, waste management, green construction, sustainable agriculture, and eco-tourism. This contributes to economic growth, diversification, and employment opportunities.

14.1 The Market Transformation will encourage a shift in consumer preferences towards environmentally friendly products and services by making them more economically attractive compared to environmentally harmful alternatives. This stimulates demand for green products, drives innovation, and fosters a market transformation towards sustainability. Businesses may initially face costs associated with compliance, adaptation of EGST requirements, and adjustments in supply chains to align with environmental standards may have teething problems but however in the long-term benefits such as reduced environmental risks, improved brand reputation, and access to green markets can outweigh these costs.

14.2 This tax will incentivize pollution abatement measures, cleaner production technologies, and emission reductions by imposing higher taxes on environmentally harmful activities. This contributes to reduced air pollution, water pollution, and greenhouse gas emissions, leading to improved environmental quality and public health benefits. In the resource Conservation it will promote resource conservation and efficient use of natural resources by encouraging recycling, waste minimization, sustainable resource management practices, and circular economy initiatives. This model will help conserve water, energy, raw materials, and biodiversity (ecosystem). By discouraging activities that harm ecosystems and biodiversity, EGST supports ecosystem protection, habitat conservation, and wildlife preservation. This is particularly relevant for sensitive ecosystems, forests, wetlands, and coastal areas facing environmental threats. In the climate change mitigation, it will contribute by promoting renewable energy deployment, energy efficiency improvements, carbon sequestration projects, and low-carbon technologies. This aligns with India's commitments to reduce greenhouse gas emissions and transition towards a low-carbon economy. In the field of sustainable consumption and production the EGST will fosters sustainable consumption patterns, responsible production practices, and eco-labelling initiatives by providing incentives for environmentally friendly products. This promotes a circular economy, reduces waste generation, and supports the transition towards a resource-efficient society.

Overall, the economic and environmental impacts of EGST are interconnected, as green taxation measures drive economic growth, innovation, job creation, and market transformation while contributing to environmental sustainability, pollution reduction, resource conservation, and climate resilience. Achieving a balance between economic development

and environmental protection through EGST requires effective policy design, stakeholder engagement, monitoring mechanisms, and continuous evaluation of outcomes.

15. Future Prospects and Research Directions

The future prospects of Environmental Goods and Services Tax (EGST) in India are promising, with potential for further development, refinement, and expansion. Future prospects and research directions for EGST in India can be implemented with enhanced Policy Design and Implementation of an integrated approach. Future research can focus on refining EGST policy design, including tax rate differentiation, incentives, exemptions, and criteria for classifying environmental goods and services. This involves evaluating the effectiveness of current EGST frameworks, identifying gaps, and proposing improvements to align with evolving environmental challenges and green technology advancements. State taxes are also high on petroleum products. Almost all the state governments in India also levy a high tax on crude oil and petroleum products at a special tax rate. Since the states experience different levels of pollution, with regard to the vehicle and other uses of petroleum products, they are entitled to use different rates that reflect considerations of their own environment. In particular, high-income countries, where per capita fuel consumption varies. Fuel taxes are often criticized for distributive reasons. It has been argued that fuel taxes can be regressive, meaning that taxes are levied on the poor more than on the rich. Such an assertion finds empirical evidence in developed countries. However, this is not the case for developing countries where fuel taxes are generally considered progressive or neutral.

16. CONCLUSION

This study indicates that an alternative emissions pathway can be achieved by scaling up current policies and to submerged with Goods and Services Tax. One of our proposals includes a gradual increase in subsidies in input Tax credit for the use of renewable energy. A cut in input tax credit on emissions by the mechanism of Environmental Goods and Services Tax (EGST) will have for reaching effect. It is this has the added benefit of early reducing dependence on coal energy reducing the adverse health effects of pollution. Technology transfer can help reduce costs and ensure sustainability. Environmental Goods Taxation, a combination of subsidies for renewable energy and higher tariffs on coal (roughly equivalent to a GST tax hike on India's existing coal) will reduce emissions will drop by almost a half by 2050. In this scenario, increasing energy demand will be met by a gradual increase in renewable energy and a reduction in coal power, exceeding the fifty percent non-fossil fuel capacity target. Under such taxation, not only will the share of renewable energy increase significantly. It will result in higher taxes paid by polluting businesses manufacturing units. As an incentive to the clean energy users manufacturing industries, larger tax revenues will be raised to compensate the poorest citizens of the ground level so that the overall Environmental Goods and Service Tax will be progressive one. Additionally, the low cost of implementation system through Goods and services network means it is more effective than other taxes.

Environmental Goods and Services Tax will be of great impact in the reduction of environmental hazardous substances emissions. Blending of this taxation system will surely cut the emissions cause by the industry. It is critical examined in this paper that that Hybrid Mechanism Environmental Goods and Service Tax will be great beneficial to Tax administration, manufacturing industry and the environment and people. Future prospects by this study will enhanced policy design, sector-specific analysis, international comparisons, technology adoption, behavioural economics, climate change mitigation, policy integration, capacity building, and long-term sustainability.

Overall, the proposed model EGST in India will enhance a promising pathway towards environmental sustainability, economic growth, and green transition, provided that challenges are addressed, mitigation strategies are implemented effectively, and future research focuses on refining policies, assessing impacts, and advancing sustainable development goals.

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