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Green Policies and Economic Growth: Balancing Climate Action with Development

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The worldwide climate crisis has been a point of controversy on whether green policies promote or retard economic growth toward sustainable development. The paper analyses the impact of environmental policies, such as the price on carbon and renewable energy shift, on the economic performance and the labour market. Even though critics focus on the immediate expenditures, the qualitative analysis based on comparative case studies of policy implementation in different economies shows that properly calculated climate policies can increase innovation, improve energy security, and promote long-term prosperity. We assess the contribution of international agreements such as the Paris Agreement and suggest reasonable measures that can be used to balance ecological and financial goals. The results underscore the fact that the strategic climate policies have long-term advantages that exceed the transitional issues, especially when inclusive social safety nets and industrial-specific strategies are put in place.

Keywords: Climate change, Environmental regulations, renewable energy, carbon pricing, policy implementation

INTRODUCTION: The issue of climate change is considered one of the primary problems of the entire world, which is largely due to the anthropogenic emission of greenhouse gases, especially CO2 due to the combustion of fossil fuels (York *et al*., 2017; Deshuai *et al*., 2022). Their effects, such as increasing the sea level and melting the glaciers, creating the extreme weather conditions, and reducing the agricultural productivity, are incredibly dangerous to human life and demand the urgent measures (Deshuai *et al*., 2022; Huang *et al*., 2023). Moving on to the issue of the core problem, the balance between environmental sustainability in opposition to economic development is an area of significant concern that should be addressed because its scholarship and public policy attention are enormous when environmental degradation and climate risks are on the rise (Lobont *et al*., 2025). The environment and the economy have suffered monstrous losses due to excessive use of fossil fuels and there is concomitant energy demand that is driving economic growth, this, however, is not the only issue since emissions are increasing thus presenting a dilemma on sustainable development (Lu, 2017). Moreover, the twofold difficult task which should be combated is the struggle against climate change and the guarantee of economic growth. One of the biggest issues is the possibility of curbing climate change through green technologies like renewable energy and yet enabling the economic growth (York *et al*., 2017). When some argue that the present-day growth in the economy conflicts with the nature of environmental conservation due to the growing use of resources, another group of people holds the opinion that excessive harm to the earth can be detached to growth through innovation can manage resources with innovation (York *et al*., 2017).

According to the United Nations Environment Programme, a green economy is one that enhances human welfare and fairness and reducing environmental hazards (Knight *et al*., 2014; Panayotou, 2000). This, however, poses the big question to Whith; can develop and be able to cut back on the emission and the negative impact on the environment? (Knight *et al*., 2014). They are not unanimous, as some researchers believe that steady-state or degrowth economies are adopted by wealthier nations since it is impossible to pursue both the emission-cutting goal and growth (expansion) is impossible to achieve (Alier, 2009). Nevertheless, mainstream policy presupposes that, it is easy to decouple growth and emissions, and hence, economies can flourish and achieve the climate goals (Knight *et al*., 2014). The Environmental Kuznets Curve (EKC) hypothesis takes this one step further by stating that emissions grow in relation to economic development, but then declines at some point where the demand of cleaner technologies and greater income prompts the necessity of sustainability (Mamun *et al*., 2025; Panayotou, 2000). The uncertainty of economic policy (EPU) inherent in emissions-reducing policies introduced by governments is a key obstacle to climate change emission control because the policies discourage green investments and preserve the use of fossil fuels (Huang et al., 2023; Fu *et al*., 2022). The same applies to the international efforts like the Paris Agreement of 2015 that intends to lower the amount of emissions and promote the use of renewable energy sources, which does not seem credible regarding the effects on changing the level of emission in the future (Mamun *et al*., 2025). This brings out the endlessly fought battle in an attempt to seek economic growth without damaging the ecosystem in addressing climate change**.**

The opposing effects of green growth policies in the economies: The results, consequently, underscore how green growth policies do better with some of the economies demonstrating the need to observe the relations between sustainability efforts as well as the level of development of a nation closer. According to the research, there is a tendency that the degree of economic development partially supported by the green growth is more likely to decelerate, yet this does not apply to poorer and richest nations (Tawiah *et al*., 2021). These findings propose a change in the worldview of an individual policy framework to the more overlooked but effective customized approaches to reach the Sustainable Development Goals in regard to the individuality of countries (Tawiah *et al*., 2021).

A two-level international transition: There are emerging reports on the reduction of carbon emissions around the world that signify the lack of a concerted strategy implemented to bring about decarbonisation. The study employs Convergence analysis that indicates the existence of two different paths: the first group comprises defined countries which are making transitions to clean energy systems, and the second group is languishing and remain on a path of growth based on fossil fuel dependence (Rochon, 2021). The difference between the green leaders and green followers and other developing countries is growing further, which can further expand the already uneven economic divide and push the underdeveloped countries into permanent poverty with no tech levels (Rochon, 2021).

The practice of the environmental Kuznets curve: The Environmental Kuznets Curve theory presents itself as a means to fill the gap with a set of income levels. The analysis of 158 countries shows that the majority of economies with a low income are likely to exhibit a positive GDP-emission relationship in which the economic growth results in a rise of the carbon output (Almeida *et al*., 2024). In comparison, the relationships are negative or mixed in the countries with upper incomes (Almeida *et al*., 2024). It means that apparently richer countries have the EKC inflexion point at which the countries can further develop, reducing their emissions, and developing countries are still on the upward slope.

Energy transition as the determining aspect: One of the key factors that influence the results of green growth is the energy mix. There is a broad agreement that the application of traditional energy impacts the sustainability development process negatively and the application of renewable energy does have a beneficial impact on green development irrespective of the economic environment (Tawiah *et al*., 2021). Regional development and openness of trade are other factors that might contribute to the reduction of emission but also offset the rise in carbon production because of some industrial practices and the patterns of knowledge transfer (Zhou *et al*., 2023).

Challenges and solutions of the region: Structural barriers to development are peculiar in the developing parts of the world. To illustrate, the Southeast European nations must construct green employment and up to date outdated renewable energy systems to develop additional inefficiency. Good policies in such situations include carbon filtered public-commercial R&D alliances, green FDI incentives, and public-commercial R&D alliances (Mitic *et al*., 2022).

The case of China shows that the combination of human capital, industrial clustering, and technological development can be the drivers of green growth, whereas ineffective export structures and energy consumption can be their limitations (Li *et al*., 2020). According to Almeida *et al*. (2024), the emphasis on such disparate outcomes can show that it is difficult to have consistent approaches to climate action. There is no universal policy solution. It is critical that in the lower-income member countries, emission policies should be able to focus on the high-emitting sectors, hence preventing the pitfall of emissions-washing, and consequently resulting in truly sustainable development**.**

RESEARCH QUESTIONS

1. How can the effects of pricing carbon, in terms of its impacts on industrial competitiveness and GDP growth, be quantified?
2. How does an investment in renewable energy affect employment and development at a regional level?
3. Which policy frameworks would reduce transitional cost and maximize long-term benefits?

OBJECTIVES

1. To examine the economic impacts of green policies in developed and developing economies and analyse their specific transmission mechanisms in sectors, including productivity, employment, and innovation.
2. The design characteristics aiming to maximize co-benefits (such as growth and job creations) are pursued by targeting mechanisms to the national economic systems and stage of its development, and disruptions should be reduced in this case.
3. To offer the policymakers with moderating guides to determined environmental goals and economic outcomes founded on information, but also, importantly, taking into account the industrial sector and the level of development in the country.

Research gap: The comparatively heterogeneous impacts of climate policies on economy have not been researchable satisfactorily in the literature. It has macroeconomic policy emission reduction literature and literature that investigates the economic success or failure of green policies but there is little literature to consider why some green policies are successfully implemented economically and some fail. The paper tries to fill this gap by assessing the dynamics of policy making, implementation techniques and techniques that are industry or sector specific to distinguish between simulative and stifling policies.

Research methodology: This study employed the methods of qualitative research and comparative case study design since Johnson (2019) compared the relationship between climate policies and economic development in countries that varied. The methodology encompasses the expert elicitations of policymakers and economists, as well as the environmental stakeholders and documentary analysis of the government reports, treaties, and agreements, such as the Paris Agreement and the policy documents. There is supplementary primary data, which is academic literature and institutional assessments. Thematic analysis will be applied to identify patterns relating to the effectiveness of policies, economic trade-off relationships as well as comparative policy evaluation in relation to the innovative regulation, energy secure regulation and employment-based regulation impacts on the economy. Various data sources with varied methods of approach strengthen the credibility to contradict the assertions thus raise validity. Ethics are related to the norms of the organization that have been violated, like confidentiality; the discriminatory policy document must be questioned in this instance. The qualitative evidence that has been corroborated by the empirical scholarly works in comparison to non-partisan institutional analysis reflects the impact of the green policies to the economic policies of the nation but the study notes that the blackness of broadened context presents a problem in generalization based on qualitative approach reasoning. This would be a strictly balanced eco-developing mixed method direction, which guides the establishment of the equilibrium of green policies within economic policy frameworks.

Planning or implementation of strategies and green growth policy pathways: Pricing carbon mechanisms: Considering the increased interest in climate policy, carbon pricing in cap and trade systems, or carbon taxes can be considered among the most successful solutions because of their cost-effectiveness (Dossa *et al*., 2024). This can be done by the market-based mechanisms which favor emission reduction by including the environmental cost of greenhouse gases through the green revenue (Zhou et al., 2023). Regional experience with carbon pricing is empirical and demonstrates the existence of innovation in the technology of emissions imposing industries and the decrease of quantifiable emissions.

FINDINGS: The results throughout the tables indicate some important revelations on the efficacy of carbon pricing and the impact of social welfare program in determining the environmental and economic performance of both the developed and developing nations. Carbon Pricing: The case studies review of carbon pricing in the world in particular, Sweden, and Australia with a repealed scheme, demonstrates that carbon pricing policies that have a foreseeable price framework and compensation schemes to industries are more likely to be successful in lowering emissions with a promotion of economic growth. The 27% reduction in emissions and the 78% increase in the GDP of Sweden is one of the best illustrations of decoupling between environmental effects and economic growth. Conversely, the failure in setting up carbon tax in Australia underscores the importance of political stability and compensating the industry to achieve long term success. Economic Effects of Carbon Pricing: The experience of Sweden, Australia and the EU Emissions Trading System (ETS) demonstrates that carbon pricing systems are capable of effectively cutting emissions particularly with industry backing when this is done in small steps. The example of Sweden proves the fact that decoupling of the amount of emissions and GDP growth is possible, and the EU ETS is the next argument that market-based measures can be effective without negative effects on the growth of the whole economy. But the unsuccessful project in Australia proves the risks of the absence of help to the affected industries, and it is worth noting that the policy should be uncompromising and correctly designed. Green Innovation: Tax credits (R&D), feed-in tariffs and carbon pricing, have all been shown to positively influence investment in clean energy and technology. The feed-in tariffs used in Germany and the tax credit on R&D has also helped to cut solar PV prices by 40 per cent, and the tax credit on R&D has led to a large increase in clean tech patent development. These results reveal that economic incentives in innovation are effective in encouraging the private sector to invest in cleaner technologies, and it has been proved that the policy tools play a significant role in green innovation. Challenges in developing countries: The issues of fossil fuel-related relationship, non-access to energy, and inadequate opportunities to invest in green technologies demonstrate why climate policies should be customized to the needs of the developing countries. The level of reliance on fossil fuels in the countries such as Nigeria and the low levels of green FDI indicate that developing nations have significant challenges in their way towards the process of changing to a more green economy. It is obvious that various countries require diverse climate policy schedules and worldwide financial restructuring because numerous developing countries require greater effort and time to move to clean energy without endangering their financial stability.

Tabel 1 indicated carbon policies that are used in Sweden and Australia. Sweden has an excellent example of a carbon tax, which was introduced in 1991, with a 27 %t drop in emissions between 1990 and 2020, and a 78 %t increase in GDP. The main lesson learned here is the value of predictability of prices that gives an opportunity to invest in sustainable technologies and industries in the long-term. This is compared to the abandoned scheme (2012-2014) in Australia with a fixed price of $23 per ton, which was dropped just two years later because it was not compensating the industries, particularly the mining industry which accounted to 86 %t of exports. The collapse of the Australian scheme points out the necessity of the support of the transition in the industry and stability of the policy to become politically viable and effective**.**

Table 2 is a review of the economic effects of carbon pricing policies in Sweden, Australia, and the EU. The carbon tax in Sweden has led to huge emissions went down (27) but at a high economic growth (78% GDP growth). These results indicate effective decoupling of the growth and emission reduction process that proves that progressive rates increase, and industry compensations are relevant to ensure the realization of the environmental and economic goals. However, conversely, the dumping of the carbon tax plan in Australia highlights the significance of policy certainty and

necessary assistance to the fossil fuel sector shift. According to the EU Emissions Trading system (ETS), environmental emissions (21%) can be reduced through the well-designed cap-and-trade system that will not negatively impact the economy, which supports the argument in support of market-based climate policies, supported by policies that will keep the sector competitive.

Table 3 showed how various policy instruments influence the green innovation. The EU R&D tax credits resulted in 22% growth in the number of clean tech patents between 2010 and 2020, which indicates that incentives to innovate are an effective instrument to enhance technological development in clean energy. On the same note, with the feed-in tariffs in place, Germany has seen the cost of solar PV systems drop by 40 %t between 2000 and 2015, which shows that demand-pull policies can cut the price of green technologies dramatically. The EU ETS carbon pricing also resulted in the increase of clean energy investments by 15 per cent indicating that market signals provided by such systems can successfully stimulate innovation in the clean energy sectors by the private sector, and again supporting the relevance of economic incentives to promote the development of green technologies.

Table 4 dwells on the issues of developing nations as far as climate change and green investments are concerned. The financial risks of fast decarburization are high in such countries as Nigeria where 86 %t of the government income is supported by oil. This underscores the importance of economically prudent planning and diversifying national economies to prevent economic instability in the process of switching their energy systems to greener systems. Access to energy is a timely problem, as 760 million individuals are without access to electricity by 2023. This implies that differentiated climate policies which have different timelines to enable the sustainable development of energy without jeopardizing the short term energy demands are needed by the developing countries. Finally, the Green Foreign Direct Investment (FDI) barriers in the developing countries are clear as a very small percentage of the global clean energy investment finds its way into the country, only 12%. This is an indication of systemic inequity in delivering climate funding and demands global financial reforms to resolve inequity that would see developing countries in a position to contribute to green transition appropriately.

Policy	Design	Outcomes	Lessons
Sweden's Carbon Tax (1991–Present)	$137/ton with 7% annual real increases	27% emissions drop (1990–2020); 78% GDP growth	Price predictability enables long-term investment
Australia's Repealed Scheme (2012–2014)	$23/ton fixed price	Aborted after 2 years	Insufficient industry compensation and export exposure (86% mining output) undermined political viability

Table 1: Global Carbon Pricing Case Studies

Policy	Key findings	Source	Interpretation
Sweden's Carbon Tax	27% emissions reduction (1990-2020) alongside 78% GDP growth	OECD (2023), Nordhaus (2019)	Demonstrates successful decoupling when implemented with gradual rate increases and industry compensation
Australia's Repealed Scheme	Policy abandonment after 2 years due to political resistance	Garnaut (2015)	Highlights critical role of policy stability and fossil fuel industry transition support
EU Emissions Trading System	21% sectoral emissions reduction (2005-2020) with neutral macroeconomic effects	EC (2022)	The EU ETS demonstrates that well-designed cap-and-trade systems can achieve significant emissions reductions without negatively impacting overall economic growth, highlighting the viability of market-based climate policies when implemented with complementary measures to maintain competitiveness.

Table 2: Economic impacts of carbon pricing policies.

The case studies of carbon pricing globally show that a properly designed policy can not only lead to emissions reduction but also economic growth as in the case of Sweden where the carbon tax has been properly implemented. The success of the Swedish model emphasizes the need to have predictable prices and slow but continuous rises in the carbon tax rates so that the businesses can adapt to the changes and invest in sustainable technologies. It is further strengthened by the EU Emissions Trading System (ETS) which is effective in achieving a high level of emission reduction but the impact of the system on the overall economy is neutral. The cap-and-trade system initiated by the EU through the market indicates that properly established policies can deliver environmental objectives without causing any adverse effects on the economic stability. Conversely, the Australian carbon tax policy is a lesson to learn. The temporary collapse of the Australian scheme highlights the very crucial role of considering political opposition and securing industry backing especially to sectors that are most vulnerable to carbon pricing like the mining sector. Carbon pricing policies might not be politically viable without adequate compensation systems and taking into account the sectoral effects, and in the long-term, these policies will not be sustainable. The role of green innovation policy like R&D tax credit, feed in tariff and carbon price in improving technological development and use of clean energy can be seen. An example of this is the solar PV costs in Germany where the feed-in tariffs have reduced the costs of this technology significantly, and the patents in clean tech have increased in the EU due to R&D tax credits.

Policy instrument	Technological outcomes	Source	Interpretation
R&D Tax Credits	22% increase in clean tech patents (EU, 2010-2020)	Popp (2021)	Validates innovation incentives as effective policy tools
Feed-in Tariffs	40% reduction in solar PV costs (Germany, 2000-2015)	Fraunhofer ISE (2016)	Shows how demand-pull policies can drive cost reductions
Carbon Pricing	15% higher clean energy investment in sectors covered by EU ETS	Dechezleprêtre et al. (2022)	Confirms market signals spur private sector innovation

Table 3: Green innovation impacts

Issue	Key Data	Source/References	Interpretation
Fossil Fuel Dependence	86% of Nigeria's government revenue from oil (2022)	IMF (2023)	Highlights fiscal risks of rapid decarbonization without economic diversification
Energy Access	760M people lack electricity access (2023)	World Bank (2023)	Suggests need for differentiated climate policy timelines
Green FDI Barriers	Only 12% of global clean energy investment reaches developing nations	BNEF (2023)	Reveals systemic inequities in climate finance distribution

Table 4: Developing country challenges.

These results have revealed the relevance of demand-pull policy and market signals in spurring technological innovation, particularly in renewable energy industries. These policies together with carbon pricing will produce a synergistic effect as they will lead to the investment in green technologies as well as the decrease in the emissions. The plight of the developing nations is quite clear, especially with reliance on fossil fuels and the lack of access to energy. The financial risks of a fast decarbonisation in such countries as Nigeria where oil takes 86 %t of state income reflect the necessity of the differentiation of policy timelines. Likewise, the insignificant proportion of green FDI to developing countries reveals institutional inequalities in climate finance allocation, which implies that developed countries should allocate more resources to developing countries to help them switch to clean energy. Climate finance unequal distribution contributes to inequalities, and demands to change the global financial systems to be more just in providing access to clean energy investments are essential.

The concept of green growth: Reconciling economic development and environmental sustainability: Green growth is a somewhat novel idea emphasized in the literature as a specific type of a green form of development balancing economic growth with environmental benefits and applying biodiversity in the context of accomplishing the goals (York *et al*., 2017). Other researchers are of the view that growth and development are negatively correlated because through expansion, there is overuse of resources, which causes more pollution and exhaustion of ecological resources. The others think that with the technological advances at hand and the new policy structures emerging, there is a chance to regulate the emissions and the level of resource use without hindering the growth (York et al., 2017). Breaking the information space of a given system to alleviate and reduce the issue

is known as "decoupling" that is deemed one of the simplest elements of green growth.

The European Union policy on environmental matters, such as, tries to welcome greenhouse gas emissions and socio-economic development concurrently, and finds that ecological gains can, in reality, increase competitiveness by means of a low carbon transition (Pilatowska *et al*., 2018). This opinion began to pick up momentum following the 2008 financial crisis because it is the agendas of low carbon that were weaved into economic and social policies (Huh, 2020). In general, the term green growth is used to describe the process of halting the deterioration of the environment, valuing natural resources, and effecting sustainable growth (Fujimori *et al*., 2021). Among the definitions of green economy that have been given by United Nations Environment Programme, a green economy is defined as the one that enhances human welfare and social equity and minimizes risks much to the environment (Knight *et al*., 2014; Panayotou, 2000). However, the result is the ultimate question: Can economic growth contribute to the improvement of living standards and a decrease in emissions and environmental impact? (Knight *et al*., 2014).

There are two opposing views that define this debate especially: Even other scholars think that the affluent nations ought to transition to steady-state or de-growth economies since they purport that economic growth and achieving emission targets cannot co-exist (Knight *et al*., 2014; Alier, 2009). Instead, official policy discourse is inclined to accept the concept of decoupling the idea of growth with emissions as a viable possibility, supposing that economies will still be able to develop and achieve the climate targets (Knight *et al*., 2014). Green growth is in line with the Sustainable Development Goals (SDGs) that aim to curb poverty and inequality and reduce climate risk, and enhance economic development (Wolf *et al*., 2016). Ideally, there is also an argument that in case a well-designed policy is in place, such policy can spur on the green innovations and, therefore, drive economic growth and cleaner technologies (Herman *et al*., 2023; Popp, 2001). Although the industrial policy is reported to have certain potential in achieving this change, the lack of feasibility in execution has been followed by suspicion among economists (Herman *et al*., 2023). Economically, green technologies give a chance to earn more money and save the environment, hence, becoming a priority among policymakers (Bu *et al*., 2024). Narrowing the scope down to energy transition, low-carbon economy may seem promising, but it will have to be regulated to ensure that it is inflicted with the high cost to the economy, thus becoming impossible (Huh, 2020). Instead, it is assumed that the shift towards green policies can potentially open up those changes in the economy, yet limited studies on specific policy suggestions have been conducted (Fujimori *et al*., 2021). Cross country. The evaluation of the policies is a moving target as far as the effectiveness and impact of the policies on the growth strategies are concerned and is still evolving (Herman *et al*., 2023).

According to the United Nations Environment Programme through its Green Economy Report, there is no harm associated with shifting to green initiatives to an economic growth. Instead, it contributes to growth since, once certain initial difficulties are over, green economics outperform business-as-usual models by expanding the GDP, reducing poverty, and generating employment (Lukas, 2015). The same changes are also observed in the public opinion as Western Europe and North America have a higher level of green support, indicating the readiness of people to support green initiatives and punish the violators financially (Baiardi, 2021). According to other studies, the long-term effects of investment in environmental policies are far-reaching despite the fact that, in the short-run, the environment policies need economic restructuring. Green growth studies suggest that policies which are strict on environmental protection are more likely to boost economic activity, particularly by international trades and competitions by enhancing international trade (Klyviene *et al*., 2020). Findings like these are associated with... findings in China where green innovation has re-exploited the relationship between growth and emission that now is a growth-clean technology-no emission partnership (Nan *et al*., 2022). In addition, growth in so-called green total factor productivity (TFP) enables the carbon-intensive industries to maintain the growth even in the face of strict climate policies (Chen *et al*., 2023). This means that innovation has the ability to offer economic development and environmental protection. Studies identify the growth of GDP as correlated with the adoption of clean energy in those countries that have consistent policies regarding the transition to energy (Becchetti *et al*., 2025). It is found that the economically developed countries will receive the benefit especially more than the renewable energies as the studies conducted by Becchetti reveal that a positive correlation between the expenditure on clean energy and the economic growth in the OECD countries exists (2025). The renewable energy sources also bring an economic value to the country by gaining control over imports and making the country less reliant on imports, stabilizing the prices of the energy commodities, and raising the employment rates in the country (Wani *et al*., 2024). They are sources of energy that are beneficial in combating climate change and revitalizing the economy. Green growth equation varies according to the level of development of the country. Although there is some positive outcome in the use of renewable energy in all countries, Tawiah *et al*. (2021) indicate that there is a beneficial outcome in the implementation of these sources. Observes that developed economies have a higher propensity to enjoy higher green growth dividends of technological innovation, whereas developing economies require more discriminative plans to incorporate growth and sustainability. It is important to note that the energy mix does matter because renewable energy sources will always contribute to green growth, and the opposite is also true (Tawiah *et al*., 2021). The debate on climate action has shifted its character. Environmental policies were initially seen as an expense, but currently, they pay off- half of Europeans believe climate action is economically profitable (Dossa *et al*., 2024). More specifically, carbon pricing is emerging as a market-friendly measure, and a number of economists state that it would boost productivity in the economy and minimize emissions (Dossa *et al*., 2024). Some countries have achieved absolute decoupling (growing GDP and emissions are stagnant or falling faster than the GDP growth), and most are at relative decoupling (emissions are rising, but not at a faster rate than GDP growth) (Putri *et al*., 2023).

Despite the future-conscious attitude to the environment and the economy, there is a growing concern over the existence of problematic short-term economic effects and structural problems of the green policy, particularly to poorer nations and those dependent on fossil fuels. It is revealed that such policies, at the least, initially, have tracking effects that, along with the pre-existing structures of industrial mechanisms, provide structural economic burdens or impediments to areas affected by the said policies. The implementation is subject to drag due to environmental regulations (Klyviene *et al*., 2020). On the one hand, these policies will have advantages in the long run, but on the other hand, their short-term effects like reduced productivity, contraction of employment in industries with heavy carbon emissions and inflation are too heavy on the policymakers who worry about growth and employment in the near future. The world is inequitably shifting to green development and this is generating a terrifying gap between the leaders and the followers of climate. The study introduces two divergent convergence clubs: those countries that are heading to a clean power and those whose club continues to grow with fossil fuels (Rochon, 2021). Such division threatens to exacerbate international inequalities, with less developed economies, with no capital and infrastructure to decarbonize speedily, being left behind the green technology supply chains. To economically-dependent resource states, a certain policy of climate regulation may deteriorate the situation of the state finances and trade balance without direct alternatives to compensate the lost revenues of fossil fuels. One of the interwoven realities that are not addressed is the decoupling of the growth of the economy and the emissions reduction. The concept of green growth theory promotes the notion of decoupling emissions effect and the increase of the economy, but the available data and emissions show that nearly all economies only achieve relative growth of decoupling (emissions growth is slower than the growth of GDP) and only some economies achieve absolute decoupling (Huh, 2020). The application of stringent strategies of environmental emission cuts may have negative effects to the poorer countries whose greatest need is to eradicate the problem of poverty. The policies of generating social costs like unemployment or reduced government expenditure that are caused as a result of uncontrolled reduction of emissions that disrupt the economic balance are likely to create social costs that are prone to destroy the support of sustainability platforms as Huh (2020) cautions. Recent results show that there are still more drastic trade-offs between climate adaptation and green growth, with the socially

sustainable development goals. Drought-resistant crops or flood defences, which are vital but frequently overlooked in the primary attack on the renewables, risk consuming money of wind, solar, and efficiency projects (Agan *et al*., 2023). In the case of climate-vulnerable countries, the fulfilment of adaptation requirements and the long-term decarbonisation goals becomes a task that is developed without an adequate international assistance. The result is an amalgamation of stop-gap measures- that are backed by harsh funding policies and political apathy- including the divided lower-income countries that have no choice but to go back to burning fossil fuels to keep neuralgic infrastructure up. The conflict of priorities could be even traced in international climate treaties**.**

According to Boyle (2019), the green economy is a pliable tool to create jobs and promote even distribution of growth, instead of being an ecological imperative, as defined in fundamental documents. The focus is on short term economic stability rather than on radical transformation. At the same time, it has ambiguous effects: in certain countries, the green growth indices increase, and levels of emissions are also higher because the employment of energy efficiency is not as high as the increase in consumption (Agan *et al*., 2023). Without a unified road map on how to achieve green growth, some of the advanced economies may absorb the transition costs on cushion funds and technological edge, but developing countries seem to be caught in the crossfire between climate commitments and developmental aspirations. The omission of incorporating the just transition frameworks, coupled with realistic measures criteria that help prevent the abandonment of communities, will lead to successional green growths that are unsustainable in principle. According to Klyviene *et al*. (2020), whether green growth is desirable or not is not the most significant question; the challenge is how to manage the disproportionate effects of green growth in times when billions of people cannot afford to care about the environment as long as they continue to make a living. Unless such trade-offs are squarely confronted, policymakers risk the risk of coming up with economically risky climate policies-worse still, they are socially disintegrative.

Financial incentives on renewable energy investment: The energy transition may also be increased by further public investment in renewable energy infrastructure in the form of tax credits, production subsidies and sponsorship of grid modernization (Zhou *et al*., 2023). These steps decrease the use of fossils and enhance the volatility of energy prices and minimized the burden of imports (Wani *et al*., 2024). The effective way is the combination of properly developed, stable and long-term policy with the gradual decrease in subsidies to encourage the development of the industry.

Green development of infrastructure: Sustainable infrastructure spending enhances the environment and economy. Modernization of power, transport, and urban planning processes can result in the creation of new work positions and the reduction of emissions (Chaiya, 2024). It specifically refers to southeast European underdeveloped areas, where it is necessary to pay significant attention to the fact that aging infrastructure requires a powerful focus investment in order to jump directly to renewable energy systems and to open new markets of green workers (Mitic *et al*., 2022).

Development of green jobs: All the research, development, and production up to installation and maintenance of clean technologies result in the creation of new employment opportunities because of the transition to a green economy (Tanasie *et al*., 2022). The best employment opportunities provided by the energy transition are through the development of green specialized workforce program as it satisfies the need of the displaced workers (Chaiya, 2024).

Growth policies which are innovation-driven: Climate mitigation policies must aim to promote technological innovation by promoting research and development, offering adequate market incentives, and allowing the existence of effective intellectual property (Herman *et al*., 2023; Popp, 2001). Green R&D funding and removing barriers to entry of green innovation in the private sector can increase the speed of development, commercialization of breakthrough technology.

Industrial policies of transformation: According to Zhou *et al*. (2023), the role of the public policy in addressing the declines of the polluting industries and facilitating the developments of the green industries is significant. A fine industrial policy design that aims at environmental, but economically competitive solutions is the point where rebounding economy and the environment meet. This kind of policy design usually consists of regulatory levels with some degree of transition support to troubled industries and communities (Herman *et al*., 2023).

Low-carbon regulatory frameworks: By combining various policies within a single strategy, the EU shows that it would be possible to build regulatory structures that would help to promote economic growth and reduce emissions (Pilatowska *et al*., 2018). This kind of systems incorporates industry emission limits along with incentives and subsidies to the designated industries as well as flexible compliance funds in other industries.

Green investment preferences: Directed investment policies, including tax breaks and expedited permitting, and collaborative R&D, are in high demand to attract foreign direct investment in clean technology (Mitic *et al*., 2022). In particular, developing nations can seize the opportunity of the establishment of foreign investment under the condition of the creation of the local employment and stimulation of the economy by the technological transfer**.**

Green tax reforms: Decreasing the carbon emissions and other harmful acts can be promoted through taxes imposed on the carbon emission or imposing an environmental tariff on goods (Mitic *et al*., 2022). These reforms are expected to be a gradual process in order to avoid negatively affecting the economic competitiveness of a country**.**

Sustainable trade policies: It is now trendy in newer trade agreements to include more clauses to promote environmental issues that enable green growth without contributing to race to the bottom (Zhou *et al*., 2023). One of such would be the reduction of tariffs on environmental goods and services without reducing the protection of the environment- it would lead to sustainable development cycles (Tanasie *et al*., 2022; Consoli *et al*., 2015).

Implementation Considerations:

- Policy sequences and strides have to take into account the economic climate and industry readiness to change.
- Just transitions to the affected workers and communities are dependent on social safeguards.
- There must be evaluation and monitoring systems that target on economic and environmental outcomes.
- International coordination enhances efficiency, but it prevents the issue of competitiveness.
- This holistic approach of policy demonstrates how policies may be designed in order to target various areas strategically to facilitate the transition to a sustainable, low-carbon economy without still putting aside the socio-economic wellbeing. The policies ought to be tailored however, to the national standard of development.

The future of green growth: Policy priority in sustainable development: To ensure the success of green growth policies, it is a challenge to slice the paradigm of the short-term and long-term perspectives to ensure the policies are able to place seamlessly a balance between climate actions and sustain economic spending at the same time. The conflict in the conduit harmonizing equation between the economy and emission diminishing escapes absolute amalgamation (Klyviene *et al*., 2020), at this point, the emergent evidence points to the essential policy actions that could facilitate the advancement**.** The biggest policy framework in terms of climate policies is cantered on imposing a tax on carbon emissions (Zhou *et al*., 2023). Correct imposition of carbon taxation and flexible cap and trade measures in particular discourages any additional corporate emissions, enhancing decarbonisation. These mechanisms must provide a solution to both environmental optimism and economic viability by enabling the offensive roll out and customized protective measures in specific sectors that may be deemed problematic to growth such as emerging industries. The strategic objectives that can promise a growth in case of a fundamental energy shift can be achieved with the help of public investment, which is why it is a vital factor in clean energy development. Customized subsidies, taxation allowances, and revision of some of the regulatory policies can be used by governments in the energising phase of clean energy transition and ensure they sustain societal power and pricing balance (Wani *et al*., 2024; Zhou *et al*., 2023). Coupled green infrastructure spurred clean energy transition creates a robust paradigm of emission control to a weaker region having greater potential of creating green jobs. Another crucial aspect is the consideration of the workforce aspect, which requires

adjustment of its labor market to allow equitable changes. In particular, developing economies should combine climate policies with employment policies such as skills training programs, and employment subsidies in the green programs (Mitic *et al*., 2022). This anthropocentric strategy cooperates with new ecosystems where the relationships between the state and non-governmental organizations are able to lead to the breakthrough of speed in technologies and decrease in the price of renewables (Mitic *et al*., 2022). Multilateral programs would be more applicable at the international level under the umbrella of holistic guidelines of holistic policy frameworks like the United Nations Sustainable Development Goals (Wolf *et al*., 2016). Cooperative trade policies come in handy to lift the trade barriers on environmental services and goods, and they can reinforce national initiatives (Zhou *et al*., 2023). Policymakers need to realize that these initiatives have direct implications on the overall international competitiveness and trade performance, despite it being deemed an upfront cost (Klyviene *et al*., 2020). Concentrated on transitional protection and global cooperation helps governments to balance the goals of the environment and economy without conflicting priorities. The future does not call either expansion at the expense of the environment or sustainability at an economic cost. Instead the synergistic approach of the two is by being adaptively strategically aligned**.**

CONCLUSION: As the review has highlighted, predictable price signals and industry compensation are the keys to successful carbon pricing policies to achieve optimally emission reductions without sacrificing the growth of the economy, as seen in Sweden and in the EU Emissions Trading System. Nevertheless, failure areas of Australia indicate that there should be stability of the policy and support to the industries concerned to make the policy politically viable and sustainable. Likewise, the green innovation policies like the R&D tax credits, feed-in tariffs and carbon pricing have critical roles to play in developing clean technologies and encouraging investment in the private sector which is required to move towards the low-carbon economy. In the developing world, the energy consumption was largely fossil fuel with no access to energy and future green investments are a big challenge. The results of these studies indicate that tailored climate policy schedules and international financial reforms are required so that the developing nations can be assisted in their green economy changeover without affecting the stability of the economy. Finally, the complexity of policy design, i.e. the combination of economic incentives, social provision, technological advancement and financial processes, is crucial to the success of the achievement of global environmental objectives as well as at the same time enhancing sustainable economic growth.

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