Impact Of European Union's Carbon Border Tax On Indian Industry

INTRODUCTION

The European Green Deal provides a blueprint for transforming climate and environmental difficulties into opportunities across all policy sectors and ensuring that the transition is fair and inclusive for everyone in order to make the EU's economy sustainable. The European Green Deal offers an action plan with the goals of promoting resource efficiency through the transition to a clean, circular economy, halting climate change, reversing biodiversity loss, and reducing pollution. It describes the financial resources that must be invested in, the financing options available, and how to ensure a fair and equitable transition. All economic sectors, including transportation, energy, agriculture, construction, and industries including steel, cement, ICT, textiles, and chemicals are covered by the European Green Deal. This would lead to a cleaner environment, more cheap energy, smarter transportation, new jobs, and an overall higher standard of living.

This deal states 3 major key figures-The first climate neutral continent by 2050, at least 55% less net greenhouse gas emissions by 2030 in comparison to 1990 levels and 3 billion additional trees to be planted in the European Union by 2030.The new growth strategy for the EU to move the EU economy towards a sustainable economic model is the EU Green Deal. The Fit for 55 package is a bundle of measures to modify and update EU legislation as well as to put new initiatives into place with the purpose of ensuring that EU policies are in accordance with the climate targets agreed upon by the Council and the European Parliament.By 2030, the EU hopes to have cut net greenhouse gas emissions by at least 55%. The proposed package tries to align EU law with the 2030 objective, published on 14 July 2021.CBAM is an essential element to the “Fit for 55 paTheckage”.

The European Union (EU) Commission launched the Carbon Border Adjustment Mechanism (CBAM) as part of the new policy initiative of the European Green Deal to decrease the risk of carbon leakage and to ensure competitive prices in the European market . CBAM is suggested as one of many policy solutions to help achieve the newly defined 2030 carbon neutrality goal and a 55% decrease in emissions from 1990 levels. The present emissions quota must be significantly reduced in order to meet this increased climate ambition. A European carbon border tax would have an effect on all industrial sectors that depend on imports into the EU, either directly or indirectly, and would affect sourcing choices along whole value chains.Increasingly, CBAM is being

examined as a trade policy tool to level the playing field by imposing carbon-based import tariffs on certain items entering the EU. Without the successful execution of a CBAM, the EU would see significant increases in carbon leakage and a fall in exports.

EUROPEAN UNION'S CARBON EMISSION TAX

The carbon border adjustment mechanism (CBAM) is a policy proposal that aims to address the issue of carbon leakage by imposing a fee on imports from countries with weaker climate policies. The CBAM works by requiring importers to purchase carbon certificates to offset the carbon emissions associated with the production of their goods. The cost of these certificates would be based on the price of carbon in the EU emissions trading system.

The CBAM is designed to create a level playing field for domestic producers and to incentivize countries to adopt more ambitious climate policies. By levying a fee on imports that do not meet the same emissions standards as domestic producers, the CBAM can make domestic products more competitive and support jobs in green industries.The CBAM would guarantee that the price of imports more accurately reflects their carbon content, as suggested by the European Green Deal. The goal of this move is to ensure that the Union complies with its international obligations as well as those of the World Trade Organization (WTO).

Mechanisms similar to Carbon Border Adjustment Mechanisms are already implemented in regions around the world, such as California, where certain imports of electricity have adjustments applied on them. Many nations, including Canada and Japan, are preparing comparable initiatives. Additionally, the OECD and IMF have recently conducted research to determine how these actions could aid global efforts to cut greenhouse gas pollution.

The Carbon Border Adjustment Mechanism will be implemented gradually and initially only apply to a specific group of goods at high risk of carbon leakage: iron and steel, cement, fertiliser, aluminium, and electricity generation. This is done to give businesses and other nations legal certainty and stability. With the aim of facilitating a smooth implementation and facilitating communication with third countries, a reporting system will be in place for those goods as of 2023, and importers will begin making a financial adjustment in 2026.

Experts have been debating the notion of a carbon border tax for years. Trading partners often perceive unilateral designs as unfair. It runs the risk of turning into a protectionist tool that unfairly shields domestic sectors from international competition in the name of "green protectionism." However, the possibility of "carbon leakage" demanded action by the EU, even if it was unilateral. Carbon Leakage occurs when businesses located in the EU relocate carbon-intensive production to nations with lesser climate regulations than the EU, or when EU products are replaced by more carbon-intensive imports. In the European Union, the EU ETS addresses the danger of carbon leakage.The EU Emission Trading System (EU ETS) restricts CO2 emissions from thousands of sites in the manufacturing and electricity sectors, which must buy permits to emit CO2. Approximately 40% of European Greenhouse Gases (GHG) are currently covered by the EU ETS. In order to reduce overall emissions, a “cap” on the number of emission rights that may be used is set during specific times. Participants purchase or receive emissions allowances that they can sell further within the cap.It is intended to start the transition away from the energy production of conventional fuels, which pollutes industry, transportation, and waste disposal. For cement, electricity, fertiliser, aluminium, iron, and steel, CBAM will construct a "shadow ETS." This compromises EU and global climate goals, and thus Carbon Border Adjustment Mechanism (CBAM) was proposed.

WORKING

An import duty based on the quantity of carbon emissions produced during the production of the product in question is known as a carbon border adjustment tax.The CBAM would impose taxes on imported products that are sold on EU markets based on their carbon content (the emissions necessary to create them), which is influenced by the inputs of materials and energy. CBAM will eventually capture more than 50% of the emissions in ETS-covered sectors thanks to this expanded reach. In accordance with the political agreement, the CBAM will start its transitional period on October 1st, 2023. Businesses in the EU and outside the EU, as well as public bodies, will be able to make a deliberate, predictable, and appropriate transition thanks to the gradual phasing in of CBAM over time. During this time, importers of items covered by the new regulations are only required to report the direct emissions of greenhouse gases (GHG) that are already present in their

shipments. According to the agreement, indirect emissions will be included in the scope after the transitional period, based on a methodology that will be established in the meantime.The CBAM will, in theory, encompass imports of goods from all non-EU nations. Nevertheless, the mechanism will not apply to certain third nations that are ETS participants or that have an emission trading system connected to the Union's. Members of the European Economic Area and Switzerland fall under this category. Until the moment at which those electricity markets are fully integrated, CBAM will be applied to electricity produced in and imported from nations that desire to integrate their electricity markets with the EU. These nations might then be exempted from the mechanism under strict conditions related to their fulfilment of specific obligations and promises.

Beyond the CBAM's sectoral scope, the exemptions are important for third nations exporting to the EU.

1. Equivalence, which exempts exports from the EU's CBAM, could be given to nations with domestic carbon prices comparable to those in the EU. This would prevent the imposition of two carbon taxes. Partial equivalence is another option; nations with internal carbon prices that are lower than the EU's may profit from lower CBAM levies on their exports to the EU.
2. A proportionately lower fee may apply to imported goods that have been made with fewer emissions than their EU equivalents. For instance, even if the imported ceramics came from a nation without a domestic carbon price comparable to the EU and were subject to the CBAM, there would be no CBAM charge if the importer of the ceramics could show that the ceramics had been made in zero-carbon geothermal kilns.

When the permanent system goes into effect on January 1, 2026, importers will have to record each year how many items were brought into the EU the year before, together with the amount of embedded GHG. The equivalent number of CBAM certificates will then be turned in. The cost of the certificates will be determined by the average weekly auction price for EU ETS allowances, which is expressed in euros per tonne of CO2 emitted. In the years 2026-2034, the phase-out of free allocation under the EU ETS will occur concurrently with the phase-in of CBAM.

Before the definitive system goes into effect, a review of the CBAM's operation during its transitional period will be completed. Simultaneously, the product scope will be examined to determine whether it is feasible to include other commodities produced in industries covered by the

EU ETS in the scope of the CBAM mechanism, including specific downstream items and those identified as viable candidates during discussions. They will be included by 2030 according to a timeline in the paper.

INTERNATIONAL RESPONSES

Exposed sectors assert that a CBAM with export rebates and ongoing free allocations is necessary to prevent significant carbon leakage within the EU. Producers outside the EU may experience varying effects based on their carbon intensity, current infrastructure, and reporting capabilities for emissions.

Most discussions focus on significant trading partners like the US and China without taking into account that the EU is the largest export market for many smaller nations, some of which also export goods with high emissions. When the Commission started the CBAM discussion, third nations initially reacted by pushing back. Some nations charged the EU with protectionism, among other things, for using goals for pollution reduction as a cover for imposing a tax on imports. For instance, CBAM was deemed unfair by the BRICS nations (Brazil, Russia, India, China, and South Africa).Africa is home to some of the nations that are particularly vulnerable to and exposed to CBAM. Experts issue a dire warning that CBAM could harm some African countries, including Algeria, Egypt, and Nigeria, and seriously impair their ability to continue industrialising.

IMPACT ANALYSIS

Impact assessment of CBAM within the EU was done using a general equilibrium model called JRC-GEME3.Trade between the EU and the rest of the world, production, GDP, unemployment, and GreenHouse Gas emissions are the primary factors examined in the impact assessment. The study finds that the mechanism has little effect on the GDP of Europe (a 0.2% decline by 2030). Due to the CBAM's dual effects on production, each sector's impact is more pronounced. On the one hand, it boosts the competitiveness of European enterprises competing with non-European firms not covered by the EU-ETS by raising the price of imports.However, because of the rise in the cost of non-European inputs incorporated into these exports (affected by the CBAM), European products become less competitive in non-European markets. Accordingly, depending on the

elasticity of replacement and the design of each product's value chain, the CBAM may improve or worsen the EU's competitiveness, having a positive or negative effect on production.

1. **Impact on trade flows**

The CBAM has a large negative influence on trade flows, causing a significant decline in both imports and exports. In the industries surveyed, imports and exports have decreased by 10% on average. Impacts on employment overall are negligibly small (+0.05% by 2030). It should be mentioned that depending on the industry, this influence differs. The application of such a strategy may lead to labour market conflicts, including potential labour shortages in specific industries or the weakening of specific employment basins.

2. **Impact on environment**

The environmental impact of CBAM results in a leakage ratio of -29%, which means that for every tonne of European emissions reduced, non-European emissions are reduced by 0.29 tonnes. The leakage rate would be +42% if free allowances were immediately abolished without CBAM, which is the extreme reverse. This demonstrates that a CBAM could indeed slow down carbon leakage. However, they also discover that Armington elasticities(Armington elasticities refer to the degree to which consumers are willing to substitute domestic goods for imported goods, and vice versa, in response to changes in prices. Specifically, Armington elasticities are the price elasticities of substitution between goods produced domestically and those produced abroad, and are used in trade models to estimate the effects of changes in trade policies on prices, quantities, and welfare.), which gauge how interchangeable different items are, are a crucial factor in understanding the variations found in the carbon leakage models.

The possibility of resource reshuffling circumvention poses a severe threat to the scheme's effectiveness. Resource reshuffling involves artificially redistributing emissions among various industrial elements, industries, or businesses. A state or business could falsely claim to have decreased the carbon content of products exported to the EU by manipulating carbon accounting in this manner without really altering the production process. These actions are challenging to foresee ex ante and challenging to assess ex post.

The legal viability and practical application of CBAM are more of an issue than the underlying theory. Trade disputes might result if it is viewed as a form of protectionism elsewhere.

Additionally, it has been demonstrated that because of varying import tariff or non-tariff restrictions, international commerce in goods is biassed towards high carbon products.

3. Impact on European Union

Export drops, which can be an implication of CBAM, do not affect developed nations. This is understandable given that producers from developed countries generally use less carbon-intensive production techniques in the targeted industries than producers from developing countries. The CBAM creates a comparable gap in welfare between developing and developed nations. Developed nations perform better than emerging nations in both scenarios. Developed country incomes increase by $2.5 billion with a $44 per tonne carbon levy, while developing country incomes decrease by $5.9 billion. However, the original introduction of the carbon price of $51 billion with a carbon price of $44 results in a higher welfare loss for developed countries, driven by losses in the European Union, while developing countries gain $1 billion in the absence of a CBAM.[1]

4. Impact on outside European Union World

Fostering the dynamics of global transition is one of CBAM's goals. Therefore, it is essential to consider any possible impacts on the rest of the world i.e outside the EU. The price dynamics of some nations will probably shift as a result of CBAM, and some economies will likely be disproportionately affected. It is expected that industrialised nations, like the EU, will apply import adjustments on embodied carbon, which will shift part of the cost of emissions pricing to emerging or developing nations. Exporting nations subject to CBAM may see a decline in fiscal income, employment and wage share, or export revenue. Exporters from developing nations might encounter a major barrier to trade with the EU. Currently, the majority of developing nations have unrestricted access to the EU market without any tariffs or quotas thanks to unilateral preference programmes or economic cooperation agreements with the EU. However, an EU CBAM could negate this comparative advantage if it only applied to exports from developing nations while exempting many exports from developed nations, either because they came from nations that had already implemented their own domestic carbon price equivalent or because the production

[1] "A European Union Carbon Border Adjustment Mechanism: Implications for developing countries." *UNCTAD*, 14 July 2021

methods of the companies in question were more carbon-efficient. The CBAM will have a disproportionately negative effect on nations that depend on exporting carbon-intensive goods to the EU. In developing nations like Ukraine, Egypt, Mozambique, and Turkey, welfare losses vary from $1 billion to $5 billion, which is a sizable amount in relation to their GDP (GDP).

The potentially regressive nature of CBAM calls for careful consideration of institutional architecture, particularly if the objective is to advance both the European Union's own decarbonization policy and global climate objectives. The CBAM should not apply to the least developed nations (LDCs), who should instead receive specialised assistance from the European Union. In other words, the success of this symbolic component of the Fit for 55 package depends on creating a CBAM that is development-friendly. It should include a larger range of development measures to help the most vulnerable nations create their own carbon neutrality plans.

South Asian economies are exposed to potential CBAM fees because of how heavily they rely on the European Union market. Around 14% of the US$40 billion in CBAM-related exports from six South Asian nations went to the European Union in 2019. India alone was responsible for slightly over 80% of these exports, and Malaysia was responsible for about 15%.

CHALLENGES

The carbon border adjustment mechanism (CBAM) bill faces several challenges that could impede its implementation. Here are some of the challenges:

1. **Compliance and enforcement**: One of the biggest challenges of the CBAM is ensuring compliance and enforcement, especially for countries that do not have robust monitoring and reporting systems. The EU would need to work with other countries to establish a framework for monitoring emissions and ensuring that importers pay the appropriate CBAM fees.
2. **Complexity**: The CBAM is a complex policy that involves calculating emissions from different industries, verifying the data provided by importers, and applying the appropriate fees. This complexity could make it difficult to implement and lead to administrative and logistical challenges.
3. **Trade disputes**: The CBAM could also trigger trade disputes, especially with countries that do not agree with the EU's approach to addressing climate change. Countries that feel

unfairly targeted by the CBAM could retaliate with their own tariffs or trade barriers, leading to a trade war that could harm the global economy.

4. **Impact on developing countries:** The CBAM could also have a disproportionate impact on developing countries, which may not have the resources or capacity to comply with the new requirements. This could lead to higher costs for importers from these countries, reducing their competitiveness and potentially harming their economies.This levy might reduce demand by making Indian products less appealing to consumers and raising their prices in the EU. It could have a significant impact on the supply chain of industries like automotives, construction, cement, packaging, and consumer appliances as costs for key inputs like steel and aluminium may increase by 15 to 30 percent, changing how end customers behave and forcing businesses to take action to stay competitive.
5. **Legal challenges**: The CBAM could also face legal challenges, as some countries may argue that it violates international trade laws or the principles of the World Trade Organization. This could delay or prevent the implementation of the CBAM or lead to changes in the policy design.

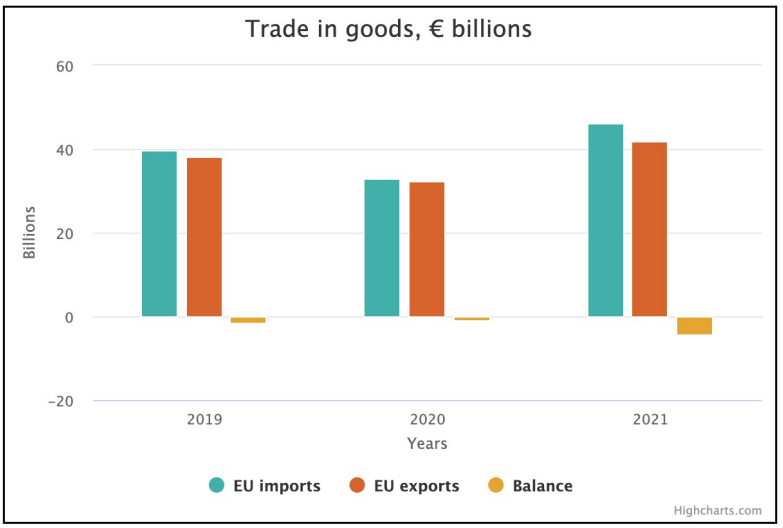
IMPACT ON INDIA

The European Union is India's third-largest commercial partner, accounting for €88 billion in goods trade in 2021, or 10.8% of all Indian commerce, which is a requirement for India to reach a 5 trillion dollar GDP. After the United States (18.1%), the EU accounts for 14.9% of all Indian shipments, while China comes in at only 5.8%. With 2.1% of the EU's total commodities trade in 2021, India ranked tenth in terms of trading partners, far behind China (16.2%), the USA (14.7%), and the UK (10%).Over the past ten years, trade in goods between the EU and India has grown by about 30%.[2]

The pertinent impact of CBAM on India's export competitiveness must therefore be carefully considered, as must whether India would be disproportionately burdened by the EU's climate policy and what steps India might take to mitigate it.The Indian industry, which has substantial export interests in the European Union, will be hindered by CBAM.

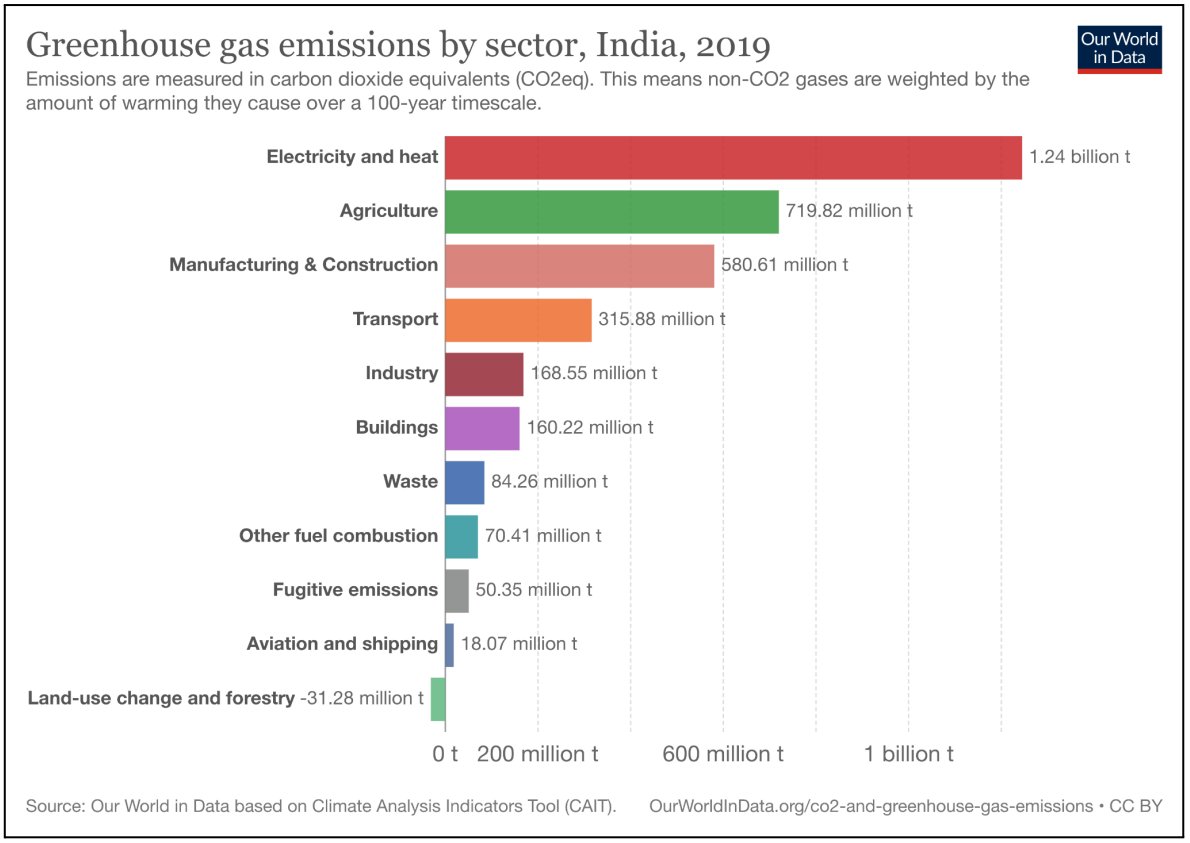
[2] EU trade relations with India." *Trade*, https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/india_en.

India's total exports in Fiscal Year(FY) 2021-22 were 2,28,39,089 dollars out of which exports to the European Union(EU) were 31,12,569.12 dollars i.e 13.63%. Share of aluminium is 1.60 % , the share of cement is 0.0000019%, the share of iron and steel is 16% and the share of fertiliser is 0.00025 %.[3]



Two factors—the carbon intensity and the trade intensity—would have a significant impact on the extent of the effects on industrial sectors.

[3] "Carbon Border Tax Adjustment (CBAM): Everything but not tax!" *EY*, https://assets.ey.com/content/dam/ey-sites/ey-com/en_in/topics/tax/2021/ey-carbon-border-tax-adjustment-everything-but-not-tax.pdf.



Carbon intensity refers to the amount of carbon dioxide (CO2) that is released in order to generate one kilowatt hour (kWh) of energy.Figures for carbon intensity show how likely different industries are to contribute relatively to the so-called greenhouse gas impact, which is a major contributor to global warming and other unfavourable environmental changes. The hard-to-abate sectors in India, however, generally have comparatively high GHG emission intensity due to the lack of regulatory carbon pricing in the country and an abundance of coal. The figure above depicts the highest contributor sector of greenhouse gases is electricity and heat which is usually released and utilised in industries using fossil fuels like coal petroleum, cement etc. Because coal makes up the majority of global energy use, Indian products have a substantially greater carbon intensity than those from the European Union and many other nations. According to the coal ministry, India's share of coal-fired electricity is close to 75%, which is far greater than the EU's (15%) and the world average's (36%).[4] Because larger emissions would result in higher carbon levies to be paid to the European Union, direct and indirect emissions from iron, steel, and aluminium are a big worry for India.

[4] Government of India." *Ministry of Coal, Government of India*, https://coal.nic.in/en/major-statistics/generation-of-thermal-power-from-raw-coal

Although there is a provision, known as the open access mechanism, that allows industrial consumers to purchase renewable energy through the grid, there are still significant regulatory obstacles and substantial state-to-state policy variations. Finally, there are few incentives for Indian businesses to engage in capital-intensive low-carbon technologies that are still in the early stages of development because there are no limits on absolute GHG emissions and no direct carbon taxation in the nation.In order to expand India's production capacity, the government has programmes like the National Steel Policy and the Production Linked Incentive scheme, but carbon efficiency has not been one of their goals.

The degree to which goods are traded, or trade intensity, is a crucial indicator since it shows how much carbon tax a particular business would have to pay if consumers didn't switch to European-sourced items. Countries like BASIC group will be affected the most due to their high consumption of raw materials like coal and petroleum. In terms of higher compliance expenses, such as the obligation to monitor, calculate, report, and verify emissions, CBAM is sure to present difficulties for those companies exporting to European markets. While the CBAM's current application may be restricted to a few industries, it is likely to be extended to other industries in the future, including those that produce the top 20 products that the European Union imports from India, including textiles, organic chemicals, pharmaceuticals, and pharma products. This could have a detrimental effect on Indian exports. This significantly hampers the Indian trade intensity. Additionally, India lacks a national carbon pricing plan, which increases the risk to export competitiveness because other nations that do have such a system may be required to pay less in carbon taxes or receive exemptions.

WAY FORWARD

1. Retaliatory duties in the European Union (EU) while looking for new markets in Asia & other developing landscapes & negotiating trade deals for goods that may take a hit due to the border tax. India may have a competitive edge over other EU exporting nations due to its relatively low specific energy consumption and CO2 emissions from the production of cement. This could result in a rise

in or rerouting of a portion of India's overall cement exports to the EU. Negotiating trade deals for this sector might be fruitful for India.

2. Special Incentives such as some exemptions to producers catering to goods & services being exported to the EU for shift to greener fuels such as solar panel production, geothermal energy production equipments & reducing the carbon emissions virtually.
3. India should take advantage of the chance to encourage cleaner production, which will help India achieve its 2070 net zero targets without compromising its development objectives or economic aspirations, and remain competitive in a future international economic system that is more carbon-conscious.Including the objective of increasing the share of non-fossil-based power production capacity to 40%, India is presently on track to exceed its Nationally Determined Contributions (NDCs) for 2030. India, one of the world's top producers of green energy, has a market environment where solar energy is more affordable than coal-based energy.
4. India needs a supportive market ecosystem for the adoption of cutting-edge decarbonization technologies if it is to promote decarbonization in hard-to-abate sectors. Utility-scale solar-based power plants already have a healthy market, but this needs to be replicated for a wider variety of emerging technologies through cooperation between business and government. By creating the India Hydrogen Alliance to support the commercialization of hydrogen technologies and the proposed National Hydrogen Energy Mission outlined in the most recent Union Budget, some businesses have started moving in this direction.Increasing outreach of Green finance and Green banks. Green banking is similar to traditional banking but in this it takes into account all social, environmental, and ecological aspects with a focus on resource conservation and environmental protection. Although they are subject to the same rules and regulations, they have an extra agenda focused on protecting the environment, habitats, and resources of the planet. In order to achieve India's broad clean energy goals, this idea was conceptualised with the knowledge that it would make use of the limited public funds to mobilise private funds.Green banks have the potential to lower interest rates and provide flexible financing to meet the requirements of financing renewable energy. A green bank system in India is proposed as a solution to the ongoing financial challenges, including reducing foreign currency risks, establishing an escrow facility, offering blended lines of credit, etc

5. Since combating climate change requires a coordinated global effort rather than developed countries developing climate legislation unilaterally that distorts international commerce, India can enlist support from other nations to pressure the EU to scrap the plan or make it more incorporating for developing countries and LDCs to cope up.

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