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India's Target to Be a Carbo-free Country: "Life" (Lifestyle for the Environment)

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Abstract

For us, the most important component is the incorporation of a sustainable lifestyle. By including it in the implementation strategy for tackling climate change, the world today took a step in that direction. Through his campaign slogan of Mission LIFE (lifestyle for the environment), Prime Minister Narendra Singh Modi sold the idea of living sustainably, and as a result, the globe is moving in that direction today.Despite the numerous various and unique concerns, the nations shown an extraordinary level of seriousness in their attempts to achieve a decisive victory on the matters affecting the battle against climate change. The research examines how the idea of sustainability is related to the country's climatic conditions and is descriptive in character. The paper is descriptive in nature and considers how the concept of sustainability is the essence of the country's well being. How the level of carbon emission is being calculated for different countries and the various risks associated with it. The basic objective of this study is to study how a developing country can be able to achieve the goal of carbon neutrality. What is the agenda of the COP summit and how do they contribute to achieving the path of sustainability?

Introduction

Prime Minister Narendra Modi made a crucial speech in response to the UN Secretary-brief General's remarks. He declared emphatically that "we are excavating our coffins" by continuing to consume fossil fuels and urged people to cease "treating nature like a toilet." At the conference, US President Joe Biden said that "*none of us can escape the worst of what's yet to come if we fail to grab this moment*," while the Prime Minister of United Kingdom Boris Johnson opined that the next generation "*will judge us with bitterness.*"

Governments from all around the world have recently been working to find solutions to the issues brought on by climate change that pose a grave threat to sustainability. The government is consistently focusing on programmes related to this issue for this reason. United Nations Environment Programme (UNEP), the Paris Climate Change Agreement (2015), and Glasgow COP26 are some of the major initiatives (2021). The 2015 U.N. Paris Agreement mandates that parties review their long-standing climate objectives every five years, and parties are advised to be more ambitious if the effects of climate change worsen.

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Prime Minister Narendra Modi declared some goals during the Glasgow United Nations climate conference last year, but they were not yet clear. In response to a review of the existing situation and consideration of the Paris Agreement, India pledged to achieving carbon neutral by 2070. (COP 21). Mr. Modi made a promise that is very important and that needs to be carried out in the allocated period.

According to the analysis of global carbon emissions offered at the 27th Conference of Parties in Sharm El-Sheikh, Egypt, it was observed that there is a chance of 50% that at the global level the world will experience global warming that exceeds the limit of 1.5°C limit within the next nine years, based on the level of carbon emissions under the current scenario.

The element we appreciate most is a sustainable way of life. Today's world made a step in the by addressing the issue of climate chang in the plane. Prime Minister Narendra Singh Modi has promoted living a more ecologically welcoming lifestyle through his campaign slogan, "Mission LIFE" (lifestyle for the environment). The nations have shown a great deal of earnestness in their efforts to make major progress on all matters that affect the battle against climate change, despite the numerous distinct and distinctive concerns.

India has surpassed China to become the second-largest emitter of carbon dioxide. Both individual human irresponsibility and India's massive population, which currently faces fierce competition from China, are possible causes of this. According to the forecast, global carbon emissions are expected to rise by 1% over 2021 levels by 2022. (36.6 billion tonnes of CO2). The authors who were present at COP 27 think that the Paris Agreement's goal of keeping global warming to 1.5°C will not be achieved. Currently, a decrease of 1.4 GtCO2 per year is needed to reach zero CO2 emissions by 2050. The observed reduction in 2020 emissions brought on by COVID-19 lockdowns is equal to this amount.

Risks Associated with Climate Change

The economy is subject to a wide range of risks, with climate risk being the most lethal for both current and future generations. Here, there are a few distinguishing qualities that set the climate risk apart from other threats. Consequences are extensive, unpredictable, non-linear, and largely irreversible. Risks related to climate change include those connected to its mitigation, its effects on the economy, and its financial ramifications. Physical risks and transition risks are the two main ways that it could have adverse effect on the economy of the country.

The macroeconomic issues related to reducing the effects of climate change, such as financial risks, geopolitical risks, trade policy and protectionism, changing global economic order, capital flows across borders, and the competitiveness of an economy or economies on the international stage, must be analysed in order to determine the cost-benefit ratios of the programmes involved. A strong financial system is needed to encourage nations to embrace the idea of green financing while keeping in mind the social and developmental goals of the nation in order to offset the risks resulting from extreme climatic disasters.

One of the greatest threats to financial stability in both developed and developing countries, it is crucial to create an effective framework for identifying, assessing, and managing this risk. Financial risk connected with climate change is the risk that is evaluated using a study of the likelihoods, effects, and responses to the influence of climate change. Therefore, both preventative measures and climate change itself may cause financial problems. Globally, a growing number of investors are beginning to steer clear of "high-emitting sectors," or companies, that incur higher environmental costs or take actions that are likely to have a negative impact on the environment Figure 1.

Such a trend might result in a decrease in funding or an increase in financing costs for high-emitting organisations, which would make it uncertain if they could continue to operate. The Reserve Bank is striving to develop a strategy that takes into account its responsibilities and interests as a national institution as well as the top methods from across the globe for minimising the negative consequences of climate change. Another major factor in the rise of pollution is the idea of "greenwashing."

#	Country	CO2 Emissions (tons, 2016)	1 Year Change	Population (2016)	Per capita	Share of world
1	China	10,432,751,400	-0.28%	1,414,049,351	7.38	29.18%
2	United States	5,011,686,600	-2.01%	323,015,995	15.52	14.02%
3	India	2,533,638,100	4.71%	1,324,517,249	1.91	7.09%
4	Russia	1,661,899,300	-2.13%	145,275,383	11.44	4.65%
5	Japan	1,239,592,060	-1.21%	127,763,265	9.70	3.47%
6	Germany	775,752,190	1.28%	82,193,768	9.44	2.17%
7	Canada	675,918,610	-1.00%	36,382,944	18.58	1.89%
8	Iran	642,560,030	2.22%	79,563,989	8.08	1.80%
9	South Korea	604,043,830	0.45%	50,983,457	11.85	1.69%
10	Indonesia	530,035,650	6.41%	261,556,381	2.03	1.48%

Figure 1: (Source: Worldometer)

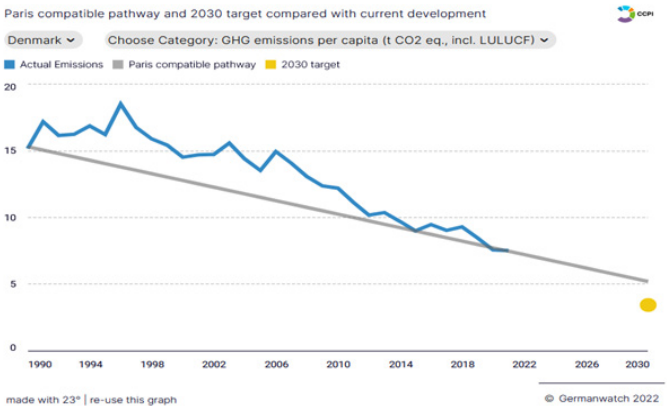

Figure 2: (Source: Worldometer)

CLIMATE CHANGE PERFORMANCE INDEX

The Climate Change Performance Index was created by Germanwatch (CCPI). It serves as a tool to promote transparency in international climate change policy. It highlights the openness in global climate prospects and contrasts it with the climatic circumstances at the national level of various countries. It evaluates their initiatives and growth in light of the climate. The CCPI uses a set of uniform criteria to evaluate and compare the climate performances of 59 nations and the EU (as of CCPI 2023). More than 90% of the world's emissions of greenhouse gases (GHG) come from these groups (*CCPI website). This index is available to everyone. It serves to serve as a reminder and an inspiration for the nations, and it fosters a sense of awareness and treating oneself as a responsible son of one's mother, the earth. Rankings of the countries clarify the complexity involved in recognising responsibilities and fulfilled and broken promises.

India must take sufficient measures to stop harmful climate change because it is among the top three. As the CCPI employs a standardised framework to measure the climate performance, the nation must be on track with its emissions development compared with the benchmark of well below 2°C and has set a 2030 GHG target. Even Denmark, the CCPI front-runner, does not meet these requirements. This measure was first presented at the national and international levels at the 11th Summit of the Parties (COP 11) climate change conference in Montreal in 2005.

The setting at the international press conference at COP 13 in Bali, when the index was only briefly announced, makes clear how crucial it is: there was already news coverage from more than 100 countries. Since the CCPI's debut in 2018, it has periodically assessed whether countries are correctly establishing their targets and upholding the promises they made at the Paris climate summit. The majority of the data in the CCPI index is quantitative, including information on greenhouse gas emissions and several other categories of energy use Figure 2.

The information comes from the International Energy Agency (IEA), PRIMAP (The PRIMAP-hist dataset integrates a number of freely available datasets to produce a thorough collection of greenhouse gas emission pathways for nations), and Kyoto Gas, and it covers the years 1750–2019 and all UNFCCC United Nations Framework Convention on Climate Change (UNFCCC) member countries the UNFCCC region. These categories from the 2006 data cover the main IPCC (Intergovernmental Panel on Climate Change) problems. Due to data availability and methodological concerns, the land use, land-use change, and forestry (LULUCF) data in version 2.3.1 of the PRIMAP hist dataset should be used with extreme caution), the Food and Agriculture Organization, and the national GHG inventories submitted to the UNFCCC. Since most data is only accessible two years after recording, the data year is always two years previous to index publishing. However, his GHG emissions data for 2021 (calculated using mathematical techniques and linear extrapolation) are used in CCPI 2023.

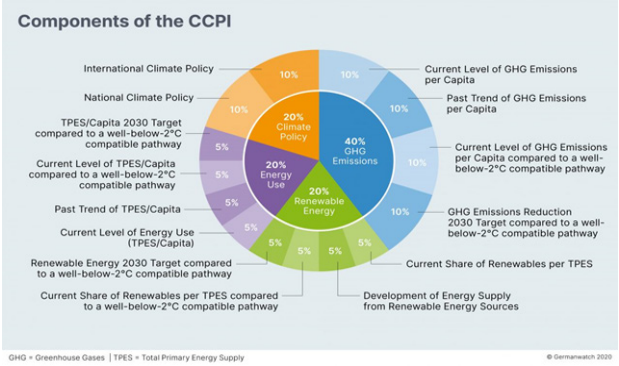

Figure 3: Source: https://ccpi.org/methodology/

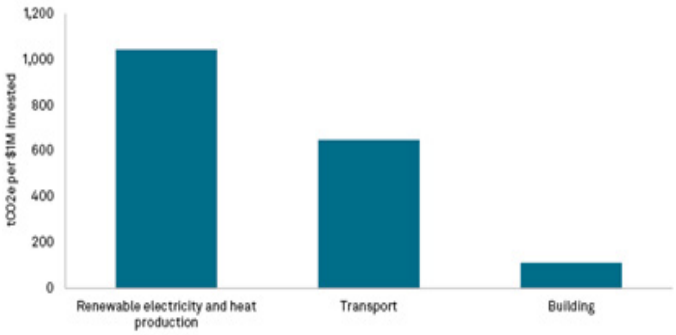

Figure 4: Source: 2022 trucost green bond dataset, S & P global sustainable

Data for the climate policy category is gathered yearly using thorough questionnaires. Experts in energy and climate policy from NGOs, academic institutions, and think tanks in the countries that make up the categories as a consequence assess the efficacy of the policies.

The graph illustrates how each nation has performed over the last few years as it compares each nation's progress toward achieving the Paris Agreement's 2030 aim. Due to the fact that most data isn't accessible until two years after being recorded, the data year is always two years previous to the index's publication. To obtain the GHG emissions figures for 2021, he did, however, use mathematical techniques and linear extrapolation. These statistics were subsequently included in the CCPI 2023.

The graphic below shows the components involved in the CCPI index. It aims to deliver a detailed and 360° evaluation of the diverse countries at climate parameters Figure 3. It considers 14 indicators (outer circle) under the following domains:

- GHG Emissions (40% of overall score)
- Renewable Energy (20% of overall score)
- Energy Use (20% of overall score)
- Climate Policy (20% of overall score)

INDIA'S POSSIBLE GAINS FROM TRANSITION TO A NET ZERO-CARBON GROWTH PATH

The Paris Agreement to tackle global warming has been ratified by 185 nations, including India. India commits to a 33–35% decrease in emissions intensity as part of its nationally determined contribution (NDC). By 2030, India wants 40% of the nation's energy capacity to come from nuclear or renewable sources. By August 31, 2022, a total of 163 GW of built capacity for hydropower and other renewable energy sources will be available. The installed capacity for renewable is as follows:

- The following sources of energy make up the remaining GW: wind power (41.2 GW), solar power (59.34 GW), biomass (10.2 GW), small hydropower (4.88 GW), waste to energy (0.47 GW), and large hydropower (46.85 GW).
- The target is to achieve net-zero carbon emissions by 2070 and 50% cumulative installed electric power by 2030, the World Bank has said.
- A recent study revealed that a significant portion of the new coal plants might be abandoned. India is building a massive solar-wind hybrid project in Gujarat, which is the world's largest. Forecasts for how the demand for coal in India would change have regularly been revised lower. Instead, India is promoting the use of biomass, which it claims is greener and more effective Figure 4.

A PATH WAY BY THE INDIAN GOVERNMENT TO BECOME CARBON NEUTRAL

Green Bonds: Gaining momentum

Mitigation of climate change is one of the many environmental advantages that green bonds, a particular kind of finance tool, may support. Green bond initiatives, however, haven't always

generated as much carbon emissions as commercial enterprises have up to this point. Here, in addition to the present initiative based on green labelling, we assess the possible advantages of a corporate-level score based on carbon intensity. In our opinion, such a score machine should operate as a motivator for firms to lower their carbon footprint and as a good signal to investors.

"Green money" refers to financial investments made in projects and initiatives for sustainable development, environmental goods, and regulations that support the growth of a more sustainable economy. The preservation of biodiversity and the reduction of industrial pollution are just a few examples of the broader spectrum of "other environmental objectives" that are also covered. The funding for adaptation and mitigation is especially important for actions connected to climate change. While investments that help lessen the consequences of climate change on commodities and people are tied to financial flows for adaptation. "Mitigation of financial flows" refers to investments made in projects and initiatives that aid in the reduction or eradication of greenhouse gas emissions (GHGs).

From a theoretical perspective, "green finance" can be defined as the financing of investments that have a positive impact on the environment within the context of broader environmentally sustainable development. These environmental advantages include things like lessened land, air, and water pollution, lessened greenhouse gas emissions, and improved energy efficiency. Even though different countries may technically interpret this principle in a different way, it is unambiguous in its direction. Given that asset managers, many issuers and governments now prioritise green finance as a top priority, interest in green bonds and green financing is increasing.

Global average of averted emissions intensity for green bond project activities, tCO2e per $1M spent. Ones of carbon dioxide-equivalent (tCO2e).

By monitoring the green bond's usage and its impact on climate (carbon) over the course of the bond, the Trucost Green Bond enables stockholders to ensure and check the beneficial effect achieved by these bonds is consistent with the anticipated results. Additionally, the dataset's scores are supplied, which fund managers may find helpful when selecting green bonds.

There is still a long way to go until net zero is reached. The IPCC estimates that it will take annual investments of $3.5 trillion to keep global warming to 1.50 C over preindustrial levels by 2050. This move will be made easier by the availability of transparent and excellent comparable data, and green bonds will be considered a powerful tool to enable it.

What about green bonds, when considering them to be as a means to reduce the impact of climate change? Theresa Fatica John Panzica Comparing green bond issuers to conventional bond issuers with comparable with its financial features and environmental ratings, 2020, JRC Working Papers in Economics and Finance, 2020/10 explained that soon after the borrowing from the green segment, green bond issuers have demonstrated a reduction in the usage or emiiting of the carbon from their assets. The reduction in emissions is greater, more notable, and more sustained when we eliminate green bonds used for refinancing. This is consistent with new projects leading to an increase in the volume of climate-friendly activities. We also notice a higher emission reduction for green bonds with an external evaluation and for bonds issued following the Paris Agreement.

Climate Finance

Although it is not the only one, climate financing is a part of green finance. Measures for reducing the effects of climate change and adapting to them are funded by local, national, or international funding that is gathered from a variety of sources. The Convention, Kyoto Protocol, and Paris Agreement impose financial obligations on the parties to support those who are less fortunate and more vulnerable. This recognizes the broad variances in each nation's level of their citizens contribution to combat climate change issues as well as the capacity of the nation to mitigate its impacts. Mitigation of climate change requires climate finance since significant emissions reduction necessitates significant investments. Because it takes a significant amount of money to prevent the negative effects and adjust to a changing climate, climate, climate finance is equally

vital for adaptation.

The presence of climate funding from industrialised nations must, however, complement India's efforts. This shift will be challenging without foreign funding offered at favourable conditions. According to the report by Council on Energy, Environment and Waters' which was conducted on the consequences of a net-zero target for the sectoral energy transitions of India and its climate policy, the country will need to install more solar power capacity than 5,600 Gigawatts and reduce its use of coal, especially for the generation of electricity, by 99% by 2060 for achieving the desired status by 2070. The consumption of crude oil is expected to be at its peak in all the sectors of the economy by 2050 and then it will be observed that there will be a sharp reduction in the consumption by 90% between 2050 and 2070. It is estimated that Green hydrogen will contribute upto 19% of the needs in the industrial sector for energy generation. The various other initiatives launched by India:

- sovereign green bonds should be issued in public sector initiatives
- Thermal power stations will co-fire 5-7% biomass pellets, reducing carbon dioxide emissions by 38 MMT yearly.
- 59 solar parks have been approved in India with a combined capacity of 40 GW;
- Solar Parks of 7 GW capacity in Pavagada, Kurnool, and Bhadla-II are the top 5 operational solar parks of the nation;
- India gives a good platform for better opportunities for investments in the RE sector; **Union Budget 2022 Highlights**
- For the solar PLI Program, an additional funding of INR 19,500 cr is assured.

Other Guidelines Issued by GOI

- Through efficient and result-driven actions, it is important to promote the development of methodologies for vulnerability and adaptation at all scales as well as capacity-building for the integration of adaptation issues in sustainable development projects.
- Since economic growth is required for the adoption of policies and for addressing the issue of climate change, policies and for the protection of the climate system against change caused by humans should be appropriate for the unique circumstances of each party and should be taken into consideration with various national development and awareness programmes. We should promote and focus on sustainable development.
- Toto achieves sustainable development, and all parties are required to keep implementing their pledges to combat climate change and its detrimental effects. This is carried out while taking into account their various but related roles as well as their distinct priorities, aims, and conditions for national and regional growth.
- For developing nations, adapting to the negative effects of climate change is a top concern that requires immediate attention and action from the international community.

Key Points to be Highlighted in COP27

- Countries agreed to establish a historic loss and damage fund.
- The fund will provide financial assistance to help them deal with the adverse effects of climate change on their economies and societies. India is considered as one of the most vulnerable countries and it will be considered as the fund's beneficiary. India has multiple sensitive areas. These funds are meant to support developing countries which are vulnerable to the impact of climate change adversely. Institutional arrangements are established for preventing, minimising and addressing the damage that is associated with the effects of climate change.
- The enhancement in the investment of green renewable hydrogen forum
- Introduction of a new insurance system called Global Shield is implemented to provide financial aid to vulnerable nations badly affected by climate change. This system initially receives revenue of €200 mn of funding.
- It is announced initiate a new five-year work programme to promote climate technology solutions in developing counties.
- UNSG Antorio Guterres announces $ 3.1 bn to make sure that every individual is protected with

in next 5 years by early warning systems.

- US Environmental Protection Agency announced to expansion of its 2021 methane rule, and reduce methane from the oil & gas industry by 87% below the 2005 level.
- In order to stop deforestation and land degradation by 2030, the Forest and Climate Leaders Partnership was established. This initiative has resulted in considerable advancements in the preservation of forests.

Conclusion

The COP meeting was the sole subject of this descriptive report. Representatives from practically every nation on earth participate in the COP on climate change, which is an annual agenda where global climate change prevention goals are discussed, individual nations' strategies to accomplish those goals are given, and progress is reported. Here, the researcher tries to draw a link between this conference and its effects on global warming. These are unquestionably good ways, but in order to be sustainable, a focused and planned strategy is still needed. The administration is devising several strategies and putting them into action with great zeal, but instead, the climate is getting worse overall.

Varied authors have different opinions on this from one another. The recent downpour in Indonesia, which resulted in a severe level of rainfall and a significant loss, is one of the examples of the fast changing climatic circumstances that have prompted participation from a number of nations in this COP-27. In order to attain the goal of sustainability, it may therefore be said that good and efficient policies need be put into place.

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