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INDIA'S COMMITMENT TO CLIMATE CHANGE AND THE INNOVATIONS IN GREEN FINANCING

Article Particulars

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Abstract

196 UNFCCC member countries have signed The Paris Climate accord which is an agreement within the United Nations Framework Convention on Climate Change (UNFCCC) dealing with greenhouse gas emissions mitigation, adaptation, and finance starting in the year 2020. India being the fourth largest emitter of greenhouse gas emissions has ratified its NDC in 2016, which represents targets and actions post 2020.India requires a huge amount of funds to realize this ambitious target. It is estimated that India needs $2.5 trillion by 2030 to meet its climate goals. How does India mobilize these funds? This paper discusses the issue of climate change in the backdrop of the Paris Agreement of 2015, India's first NDC, its efforts and initiatives in climate funds and the need for innovative green financing instruments.

Background

Frequent wildfires, increase in the duration and intensity of tropical storms, shrinking glaciers, smog (recently in Delhi, china), longer periods of drought increase in heat waves. All these observable effects on environment has already been predicted in the past and all this, scientists claim is due to climate change, a buzz word in recent times. Around 1300 scientists from the United States and other countries have forecasted a temperature rise of 2.5 to 10 degrees Fahrenheit over the next century, sea levels to rise by 1-4 feet by 2100. The Fifth Assessment Report, by the Intergovernmental Panel on Climate Change, has concluded there's a more than 95 percent probability that human activities over the past 50 years have warmed our planet and that human-produced greenhouse gases such as carbon dioxide, methane and nitrous oxide have caused much of the observed increase in Earth's temperatures over the past 50 years. Such impacts would pose a threat to humanity and could lead to irreversible climate change according to The UN Intergovernmental Panel on Climate Change (IPCC) which has warned of the consequences of failing to limit global temperature rises to at least 2 degrees Celsius (above pre-industrial times). Countries world over have come together to address the issue and have signed the Paris Climate accord promising to reduce greenhouse gas emissions. India being the fourth largest emitter has prepared the NDC (**Nationally Developed Contributions (NDCs)** with commitments to cut emissions. It is estimated that India needs $2.5 trillion by 2030 to meet its climate goals. How does India mobilize these funds? This paper discusses the issue of climate change in the backdrop of the Paris Agreement of 2015 and discusses the need for innovative green financing instruments.

The Paris Agreement of 2015

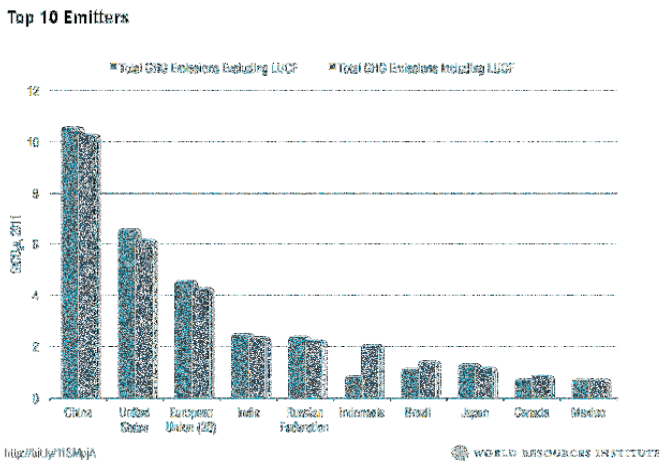
The Paris Climate accord is an agreement within the United Nations Framework Convention on Climate Change (UNFCCC) dealing with greenhouse gas emissions mitigation, adaptation, and finance starting in the year 2020. As of February 2018, 195 UNFCCC members have signed the agreement, and 175 have become party to it. This historic deal brings consensus among these countries on the need to cut greenhouse gas emissions.

The key elements of the agreement

- To keep global temperatures "well below" 2.0C (3.6F) above pre-industrial times and "endeavour to limit" them even more, to 1.5C
- To limit the amount of greenhouse gases emitted by human activity to the same levels that trees, soil and oceans can absorb naturally, beginning at some point between 2050 and 2100
- To review each country's contribution to cutting emissions every five years so they scale up to the challenge

Where does India Stand?

Data by World resource institute shows that India is the fourth biggest emitter of greenhouse gases, in terms of CHG emissions, but continues to be far behind in per capita emissions compared to the top three emitters, The United States, European Union and China. Top 10 emitters contribute over 72% of global greenhouse gas emissions (excluding land use change and forestry) while the lowest 100 emitters contribute less than 3%. Amongst the top emitters the per capita emissions are unequally distributed. With the United States' per capita emissions eight times that of India, and china contributing about 25 percent of the total emissions.



The elements mentioned above in the Paris Accord is legally binding to member countries, but the nation pledges made by countries to cut emissions are voluntary.

COUNTRIES SPEWING POLLUTION

TOP 10 EMITTERS OF GHG		TOP 10 PER CAPITA EMITTERS	
Countries	Percent of total emission	Countries	Ton of emission per capita
China	25.26	US	19.86
US	14.4	Russia	16.22
EU	10.16	Japan	10.54
India	6.96	Iran	9.36
Russia	5.36	EU	8.77
Japan	3.11	China	8.13
Brazil	2.34	Mexico	5.99
Indonesia	1.76	Brazil	5.10
Mexico	1.67	Indonesia	3.08
Iran	1.65	India	2.44

(Source: World Resources Institute)

Nationally Developed Contributions (NDCs)

Each country signed in the agreement prepares an NDC every five years. While developed countries should adopt economy wide absolute emission reduction targets immediately, developing countries should aim for this over time (Art. 4.4) India has ratified its NDC in October 2016, which represents targets and actions post 2020 to reduce greenhouse gas emissions.

India and its NDC

India has communicated its Intended Nationally Determined Contribution for the period 2021 to 2030 as below and also ratified the same in 2016.

1. "To put forward and further propagate a healthy and sustainable way of living based on traditions and values of conservation and moderation.
2. To adopt a climate friendly and a cleaner path than the one followed hitherto by others at corresponding level of economic development.
3. To reduce the emissions intensity of its GDP by 33 to 35 percent by 2030 from 2005 level.
4. To achieve about 40 percent cumulative electric power installed capacity from non-fossil fuel based energy resources by 2030 with the help of transfer of technology and low cost international finance including from Green Climate Fund (GCF).
5. To create an additional carbon sink of 2.5 to 3 billion tonnes of CO_2 equivalent through additional forest and tree cover by 2030.
6. To better adapt to climate change by enhancing investments in development programmes in sectors vulnerable to climate change, particularly agriculture, water resources, Himalayan region, coastal regions, health and disaster management.
7. To mobilize domestic and new & additional funds from developed countries to implement the above mitigation and adaptation actions in view of the resource required and the resource gap.

What about Financing?

While India's commitment to reduce carbon foot prints is highly ambitious, mobilization of funds for the cause is one of the biggest challenge India faces. This was heavily weighed upon and discussed throughout the greenhouse negotiations Developing countries have been promised US $100bn (£67bn) a year by 2020.

To enable and help developing countries to meet their commitments, the Paris Agreement mandates that developed countries provide financial resources (Art. 9), notes the importance of technology transfer (Art. 10), and calls for Parties to cooperate and enhance capacities (Art. 11).

With the ratification of NDC in 2016, it is estimated that India needs $2.5 trillion by 2030 to meet its climate goals. Industry estimates that to install a renewable energy capacity of 175 GW by 2022 alone would warrant $100 billion in investment. Now how does India mobile such huge amount of funds?

Green bonds a solution?

Green bonds have been first issued in 2007 by European Investment Bank and the World Bank. Since then it has been grown exponentially and is pegged at over $ 180 billion globally by the end of 2016. In India the green market bond market is over $ 3 billion and the majority of it is allocated to renewable energy projects. The pioneer is Yes bank which issued the first green infrastructure bonds in February 2015.

The response was huge from financial institutions, pension &provident funds, insurance and mutual fund companies. resulting in a total subscription of INR 1000 crores. India is the seventh largest green market bond globally witnessing arapid cumulative growth amounting to about Rs.18, 131crore (equivalent to $2.7 billion).

Some of the other developments that India has taken towards fulfillment of NDC is that NABARD has signed Funded Activity Agreement (FAA) with Green Climate Fund (GCF) for implementation of project viz. “Ground water recharge and solar micro-irrigation to ensure food security and enhance resilience in vulnerable tribal areas of Odisha”. Also Green Climate Fund (GCF) has approved the National Bank for Agriculture and Rural Development (NABARD)’s proposal of Line of credit for solar rooftop segment for commercial, industrial and residential housing sectors in India.

The recent introduction of India first muni bonds for water supply projects in Pune and Hyderabad is another step in the right direction.

Conclusion

India, has been showing commendable progress in taking the right steps to fulfill its commitment to reducing green gas emissions. With huge amount of funds required for the economy to move towards a climate sustainable future, apart from the growing green bond investments, there is greater need for innovations in financial products, mechanisms like aggregation and securitization to attract institutional investors, entering the blue bond market etc. The role of policy makers, regulators, corporates, retail investors and financial institutions is very crucial in addressing the climate change issues especially the financing of green projects.

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