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India at COP26 and Beyond

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Summary

The 26th Conference of Parties (COP26) was held in Glasgow, United Kingdom, in November 2021. Countries all around the world sent their national delegations to negotiate and secure their positions on the climate change agenda. India's prime minister, environment minister and a national delegation visited Glasgow to push India's concerns and agenda. While there were some wins for India, there were also some compromises. This paper presents some of the past promises and progress, future implications and key takeaways for India from COP26.

The Conference of Parties (COP) is an annual meeting of parties to take stock, discuss and advance actions to mitigate and adapt to climate change. Led and hosted by the United Kingdom (UK) presidency, the 26th Conference of Parties (COP26) had four goals: mitigation and net-zero emissions; adaptation to protect communities and habitat; delivery of finance; and working together. Earlier scheduled for December 2020, COP26 was delayed due to the outbreak of COVID-19 pandemic and had a crucial role in convening and accelerating the action on climate change. Apart from national country delegations, COP26 hosted participants from the industry, academia and civil society, all advocating for ambitious, bold and rapid climate actions while holding governments accountable.

To begin with, COP26 welcomed the Intergovernmental Panel on Climate Change (IPCC) findings, acknowledged the best available science, and prioritised urgent actions to curb temperature rise below 1.5°C, as noted in the Paris Agreement in 2015. It is estimated that human-induced temperature increase between 1850-1900 and 2010-2019 was about 1.07°C as noted in the latest report by the IPCC on physical science.[1] The delegates recognised the rapidly closing window of decisive action.

India's Climate Leadership

The COP26 conference opened with a two-day World Leaders' Summit. India's Prime Minister Narendra Modi, while delivering the national statement, surprised everyone by announcing a net-zero target year for India and enhanced short-term targets to 2030. He named these "*Panchamrit*", five nectars, and highlighted India's commitment to climate change:

- India will bring its non-fossil energy capacity to 500 gigawatts (GW) by 2030.
- India will bring its economy's carbon intensity down to 45 per cent by 2030.

[1] Intergovernmental Panel on Climate Change. Climate Change 2021: The Physical Science Basis – Summary for Policymakers by Working Group I, August 2021, https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf.

- India will fulfill 50 per cent of its energy requirement (understood as power generation capacity) through renewable energy by 2030.
- India will reduce one billion tonnes of carbon emissions from the total projected emissions by 2030.
- India will achieve net-zero emissions by 2070.

These are all brave and ambitious targets and announcements by India. They indicate that the country is dedicated and committed to solving the climate crisis. Emissions of most developed countries have peaked long back, and countries and regions such as the UK, European Union, Japan and the United States will take 77, 71, 46 and 43 years respectively between their emissions peaking year and 2050, their announced net-zero year.[2] India, on the other hand, has set a net-zero year 50 years away and still has not peaked its emissions. Evidently, India will have a small window between its peaking year and net-zero year which will determine the disruptive pace and scale of transition.

Additionally, India's current installed capacity stands at 392 GW[3] and it is expected to have 500 GW of renewable power installed by 2030. This means that it will need to exponentially add renewable energy capacity, almost replacing its entire present power fleet. What is remarkable for India is that it has already achieved 40 per cent of electric power installed capacity from non-fossil fuel in 2021. This was one of its Nationally Determined Contributions targets and was supposed to be achieved by 2030.[4]

While announcing the long-term net-zero target and short-term targets, the Indian prime minister introduced the concept of Lifestyle for Environment – 'LIFE'. He underlined the importance of behavioural change so that each one of us can contribute to preserving our environment by altering our lifestyles. India's per capita emissions of carbon dioxide stands at 1.8 metric tons, as of 2018, a staggering 4.4 times lower than the average of the G20 countries at 7.88 metric tons per capita.[5] Countries and citizens worldwide will need to alter their lifestyles to mitigate emissions.

At COP26, India, along with the UK, launched the Green Grids Initiative – One Sun, One World and One Grid mission to connect grids and primarily use solar power. This initiative will increase renewable energy deployment in places suitable for generation and location where power is required reducing the cost of energy storage. It also proves India's commitment in solving the climate crisis.

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2 Vaibhav Chaturvedi, "Peaking and Net-Zero for India's Energy Sector CO2 Emissions: An Analytical Exposition", Issue Brief, Council on Energy, Environment and Water, March 2021, https://www.ceew.in/sites/default/files/ceew-study-on-how-can-india-reach-net-zero-emissions-target.pdf.

3 Central Electricity Authority, "All India Installed Capacity in (MW) of Power Stations", November 2021, https://cea.nic.in/wp-content/uploads/installed/2021/11/installed_capacity-1.pdf.

4 Press Release, Ministry of New and Renewable Energy, 2 December 2021, https://pib.gov.in/PressReleasePage.aspx?PRID=1777364.

5 World Bank Data, Calculations estimated by authors.

Promise, Responsibility, Compromise

Over the past 25 editions of the COP, developed countries have made multiple promises to developing countries on emission reduction targets and climate finance. Yet, very often, they have fallen short. Under the pre-2020 climate commitments, in the Kyoto Protocol and the Doha Amendment, countries have emitted 25.1 GtCO2eq (total anthropogenic greenhouse gas emissions) more than their estimated emission allowances in the 2008-2020 period.[6] Accounting loopholes and no punitive actions against countries fuelled this excess emission.

Climate finance is a delicate and contested issue and promises around it have not been delivered. In 2009, it was identified that US$100 billion (S$136.46 billion) annually will be required starting in 2020 from the developed countries. However, this promise has not been fulfilled. Further, climate finance has primarily focussed on mitigation projects, while adaptation projects have not been a priority. India demanded US$1 trillion (S$1.36 trillion) climate finance to be delivered at the earliest and it would carefully track finance received. Lack of keeping the finance and emission promise undermines the developing countries' credibility and trust. They further raise questions on future promises and set targets.

Climate change was not caused in a day. Decades and centuries of emissions powering the industrial revolution in largely developed countries accelerated climate change. It is not just historical responsibility, but also future responsibility that is central to the climate justice debate. To remain within 1.5°C temperature rise, the available carbon budget between 2020 and 2100 is 400 $GtCO_2$ as noted in the latest IPCC report. With current pledges, it is estimated that the remaining carbon budget will be exceeded by 33 per cent. China and the US would consume about 267 $GtCO_2$ and 67 $GtCO_2$ respectively, cornering most of the remaining budget under 1.5°C.[7] The developed countries must honour their historical responsibilities, and, along with China, should raise mitigation ambitions.

COP26 resolved the long-standing roadblock on Article 6 of the Paris Agreement to transition carbon markets in the post-2020 regime. Though there is a compromise as not all legally certified emission reductions (CERs, or carbon credits) generated in the Kyoto regime can be transferred, this development indeed holds a promise for the future. Well-functioning carbon markets, along with pathways towards a net-zero future, open avenues for incentivising a cost-effective transition towards deep decarbonisation.

Overall, developed countries' promise delivery have been insufficient. They will need to demonstrate greater accountability and responsibility for the developing countries to trust them. Otherwise, like most climate change negotiation history, there will be compromises at the cost of the developing countries' developmental and national circumstances.

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[6] Sumit Prasad, Spandan Pandey and Shikha Bhasin, "Unpacking Pre-2020 Climate Commitments: Who Delivered, How Much, and How will the Gaps be Addressed?", Report, Council on Energy, Environment, and Water, July 2021, https://www.ceew.in/sites/default/files/ceew-study-on-pre-2020-climate-commitment-gaps-and-country-wise-results.pdf.

[7] Ankur Malyan and Vaibhav Chaturvedi, "The Carbon Space Implications of Net Negative Targets", Issue Brief, Council on Energy, Environment and Water, November 2021, https://www.ceew.in/sites/default/files/ceew-study-on-how-negative-emissions-targets-impact-global-carbon-budget-space.pdf.

The Road Ahead for India

India is a developing country with per capita gross domestic product of US$1,900 (S$2,593) in 2020. In the coming decades, it will grow to meet the developmental priorities of its people. With growth, there will an increased demand for energy, resources, infrastructure, education, healthcare, etc. But this growth has to be met sustainably. Currently, India's power sector is primarily coal dependant. It is estimated that 3.6 million people are directly or indirectly employed in the coal sector.[8] To phase-down coal power, just transitions are imperative for India to ensure lost jobs are replenished with renewable energy jobs and re-skilled human capital. India received significant backlash for diluting the original term *'phase-out'* (though this phrasing originated in the US-China joint announcement)[9], but given its dependence on coal, phase-down is a more realistic and pragmatic approach to its coal sector.

A recent study by the Council on Energy, Environment and Water estimated that if India were to peak emissions by 2040 and meet its net-zero target in 2070, with commercially available hydrogen but expensive carbon capture and storage, it would need to install 5,630 GW solar based electricity, 1,792 GW wind power and 225 GW nuclear power by 2070.[10] This mammoth transition is only possible through a just transition out of coal. A just transition refers to supporting vulnerable communities, including labour as well as households, which could be negatively impacted due to environmental or climate policies. In the case of India, labour force in the coal mining, thermal power sector and the entire value chain will need support to transition out of coal, and low-income households will need to be supported if energy costs rise due to climate policy. Additionally, aggressive investments will be required to achieve India's net-zero target. It is estimated that India would need about US$10.1 trillion (S$13.78 trillion) between 2020 and 2070[11] for the power, hydrogen and mobility sectors.

The Indian economy will need to be decarbonised even while adapting to impacts of climate change that are no longer an occurrence in the future. They are here and now. Loss and damage must be compensated. India is estimated to have suffered about US$80 billion (S$109.17 billion) in losses due to extreme climate events in the last two decades. Being one of the most vulnerable countries, 17 out of 20 people in India are vulnerable to extreme

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8 Mayank Aggarwal, "About 40 percent of India's districts have some form of coal dependency", *Mongabay*, 1 July 2021, https://india.mongabay.com/2021/07/about-40-percent-of-indias-districts-have-some-form-of-coal-dependency/.

9 U.S. Department of State. U.S. – China Joint Glasgow Declaration on Enhancing Climate Action in the 2020s. Media Note, Office of the Spokesperson, 10 November 2021: https://www.state.gov/u-s-china-joint-glasgow-declaration-on-enhancing-climate-action-in-the-2020s/.

10 Vaibhav Chaturvedi and Ankur Malyan "Implications of a Net-Zero Target for India's Sectoral Energy Transitions and Climate Policy", Working Paper, Council on Energy, Environment and Water, October 2021, https://www.ceew.in/sites/default/files/ceew-study-on-implications-of-net-zero-target-for-indias-sectoral-energy-transitions-and-climate-policy.pdf.

11 Vaibhav Pratap Singh and Gagan Sidhu, "Investment Sizing India's 2070 Net-Zero Target", Issue Brief, Council on Energy, Environment and Water, November 2021. https://cef.ceew.in/solutions-factory/publications/CEEW-CEF-Investment-Sizing-India%E2%80%99s-2070-Net-Zero-Target.pdf.

hydro metrological disasters such as cyclones, floods and droughts. Southern Indian states are most vulnerable to all three climate extremes.[12]

To overcome these challenges, India will need new technologies, innovation and adequate human resources. Although the need for technology transfer and capacity building have been highlighted in the cover decision of COP26, it is noted as a one-way donor-receiver transaction. This approach will only partly benefit India. Instead, India and the developed countries must co-develop and co-own new technologies and solutions. This will benefit India by bringing in investments, research and infrastructure facilities and human resource development. The current one-way flow of technology will further deepen the existing technology divide between the developed and developing nations.

Conclusion

In the coming years, India's commitments to climate change will need more action on the ground. The net-zero announcement has set the agenda. This has to be followed by a long-term strategy that sets sectoral priorities and actions to achieve the net-zero target. In the process, India must focus on large scale emission mitigation policies like carbon pricing through an emissions trading scheme, programmes and projects across all sectors. Moreover, local and state-level adaptation must accelerate. Lastly, India will need to be prepared to compensate losses of infrastructure, livelihood and lives as the frequency of extreme events increase.

On the international front, India must hold the developed countries accountable and reiterate the historic and future responsibilities of emissions for just transitions and climate justice. It must demand that the developed countries and China enhance their future ambitions and free up carbon space so that India and other developing countries can undergo their economic transformation. Tangibly delivered climate finance must be closely monitored so that promises are met. Furthermore, India must forge international partnership with governments and the private sector to co-develop climate solutions for the future. In the interest of its people and the global community at large, India must continue to demonstrate global climate leadership.

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[12] Abinash Mohanty and Shreya Wadhawan, "Mapping India's Climate Vulnerability – A District Level. Assessment", Issue Brief, Council on Energy, Environment and Water, November 2021, https://www.ceew.in/sites/default/files/ceew-study-on-climate-change-vulnerability-index-and-district-level-risk-assessment.pdf.