

India's Updated NDC: A Pathway to Net-Zero by 2070?

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Instant Insight

October 09, 2022

KS--2022-II10

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The meeting of the Union Cabinet of India on August 3, 2022, chaired by Prime Minister Narendra Modi, approved India's updated nationally determined contribution (NDC). The NDC aims to enhance India's contribution toward a global response to climate change (Press Information Bureau 2022).

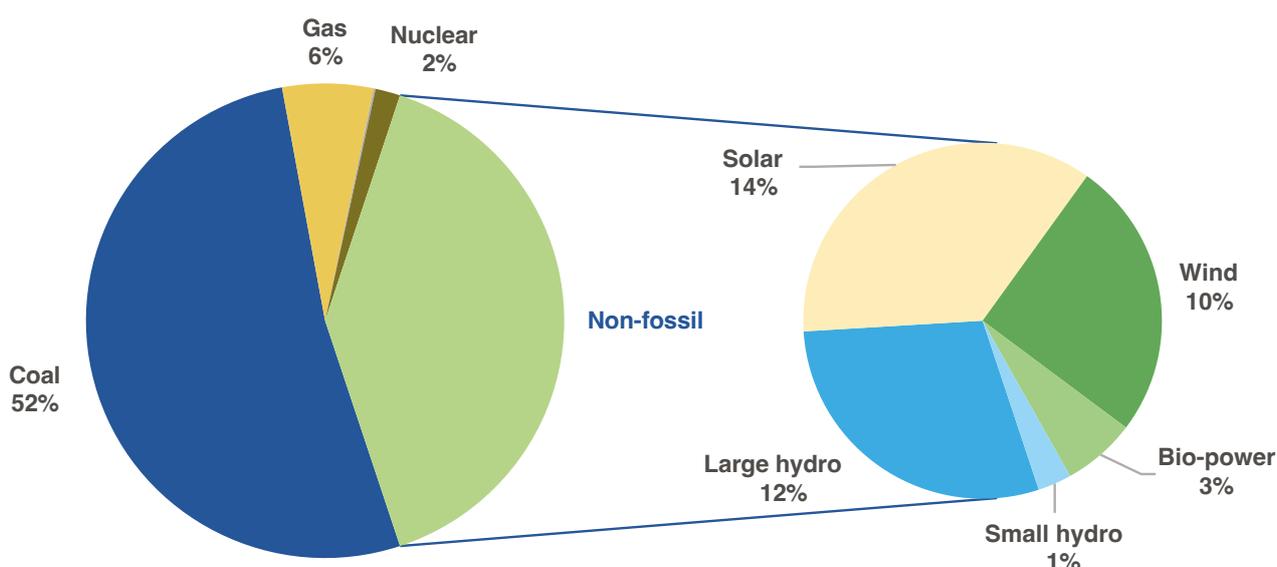
This update came in the aftermath of the prime minister's pledge at the 26th United Nations Climate Change Conference (COP 26), held in Glasgow, United Kingdom, in 2021, to reach net-zero emissions by 2070 (Bhatt, Sergeeva, and Efirid 2021). During the conference, Prime Minister Modi went on to announce four supporting initiatives toward India's net-zero commitment. These include increasing the country's non-fossil energy capacity to 500 gigawatts (GW) by 2030, having 50% of its energy requirements met by renewable energy by 2030, reducing its carbon emission by one billion tonnes by 2030, and reducing the carbon intensity of its gross domestic product (GDP) by 45% by 2030 (Ministry of External Affairs 2021). Two of these commitments have now been incorporated in the updated NDC (Press Information Bureau 2022).

India submitted its first NDC to the United Nations Framework Convention on Climate Change (UNFCCC) in 2015. In its previous NDC, India committed to increasing the share of its electric power installed capacity from non-fossil sources to 40%, reducing the emissions intensity of its GDP by 33% to 35% compared with 2005 levels, and creating an additional carbon sink of 2.5 to 3 billion tonnes of carbon dioxide (CO₂) equivalent through additional forest and tree cover (Government of India 2015). India's updated NDC emphasizes the need for technology transfer and low-cost international finance to achieve the aforementioned targets by 2030. Further, in its updated NDC, India emphasized that having healthy and sustainable lifestyles was key to fighting climate change (Press Information Bureau 2022). The updated NDC emphasizes the importance of collaboration between India's state and central governments and other stakeholders to achieve the NDC's objectives by 2030 (Press Information Bureau 2022).

Are India's Updated Targets Achievable?

India has a target to achieve 50% cumulative electric power installed generation capacity from non-fossil fuel-based energy resources by 2030. As of June 2022, it had a total electric power installed generation capacity of about 404 GW, 52% of which comprised coal-fired power plants, with 40% from renewable energy sources and the remaining about 8% from gas and nuclear power plants.

Figure 1. India's electric power installed capacity as of June 2022.



Source: Central Electricity Authority, Government of India, and KAPSARC analysis.

As per India's Central Electricity Authority's (CEA's) report on the optimal generation capacity mix for 2030, India is likely to have around 831 GW of installed capacity by 2030, out of which non-fossil¹ capacity may account for 65%. Hence, attaining a 50% share of non-fossil capacity does not seem daunting (Central Electricity Authority 2020). The report also states that India's non-fossil capacity would be 540 GW by 2030. However, India's target of achieving 500 GW of non-fossil capacity, one of the five pledges announced by Prime Minister Modi at COP 26, is not included in its updated NDC. This gives India the flexibility to add more coal-fired base load power plants in the future, if required, to fulfill the country's rising electricity demand, as long as it keeps its fossil-fired capacity share below 50%.

India's latest NDC also targets a reduction in the emissions intensity of its GDP by 45% by 2030 from its 2005 level. As per India's third biennial update report to the UNFCCC, it already achieved a 24% reduction in the emissions intensity of its GDP during 2005-2016, in accordance with its first NDC target (Government

¹ Includes power from nuclear energy.

of India 2021). To maintain the momentum of its emissions intensity reduction and achieve the new, enhanced, target, India will have to implement sector-specific measures, especially for its transport and industrial sectors (Chaturvedi 2021). Industries such as iron and steel, which are predominantly powered by coal, would require measures and policies to promote technologies like hydrogen and carbon capture and utilization. India has already started to implement projects under the ambit of the circular carbon economy framework with applications for steel and cement production (TATA steel 2021; Global Cement 2019). Further, with rising income levels, India is witnessing a rapid increase in private vehicle ownership and a decline in the share of public transport. This could slow its progress toward reducing the emissions intensity of the transport sector (Puneet Kamboj 2022). Policymakers will have to intervene in specific niches to support and accelerate India's transition toward zero-emissions vehicles while avoiding the pitfalls of unsustainable mobility behavior driven by higher disposable incomes. During his visit to the G7 summit this year, Prime Minister Modi urged the Group of Seven (G7) countries to consider promoting and investing in India's emerging market for clean energy technologies (The Print 2022).

India's updated NDC does not include all the promises made by Prime Minister Modi at COP 26. It does not include a target of 500 GW of non-fossil fuel-based electricity generation capacity by 2030 and a reduction of 1 billion tonnes of carbon emissions by 2030. It is also important to note that the promise of achieving net-zero emissions by 2070 is not part of India's NDC and can be India's submission to the UNFCCC as its long-term emissions strategy in the upcoming COP. Further, India's commitment will also rely on the response of the developed nations and their support of India's clean energy transition, both technological and financial.

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