

China's role in Global HFC emissions matters for phase-down proposals

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Hydrofluorocarbons (HFCs) are potent greenhouse gases. As HFCs have emerged as the pre-dominant alternative to ozone depleting substances, discussions are underway between the representatives of different parties of the Montreal Protocol (MP) to bring HFCs under the ambit of MP. The Open Ended Working Group (OEWG) of the Montreal Protocol is meeting this week in Paris. Till the last OEWG meeting in April in Bangkok, five countries/ groupings had presented their proposals for amending the Montreal Protocol to bring HFCs into its purview. All the five proposals largely agree on the HFC phase-down pathway for developed countries. However, there are significant differences in the proposed targets and pathways for the developing (or Article 5) countries. Two proposals that are on the opposite ends are the North American Proposal and the Indian proposal. The other three proposals are somewhere in between.

The North American proposal aims at freezing HFC consumption in Article 5 countries in 2020-21, while the Indian amendment proposes the freeze in 2030-31. Researchers have already started analysing the impact of various proposals on future HFC emissions of Article 5 and non-Article 5 countries. It is obvious that advancing the consumption freeze will lead to higher reduction in emissions. CEEW's analysis shows that the Indian amendment proposal will lead to 64% reduction in cumulative HFC emissions between 2010 and 2050 within India. In the same time frame, it appears from the global analysis led by Dr Guss Velders (and presented at the Bangkok OEWG) that the Indian proposal will lead to only 30-35% of reduction in cumulative HFC emissions from Article 5 countries between 2010-2050. It is important to investigate the divergence in results.

As per the initial results of Velders' global HFC emissions study, Chinese HFC emissions will be

31% of global HFC emissions in 2050, while India's share will be 7%. Looking at the growth trajectory of future Chinese emissions, we see that a large part of Chinese HFC emissions will happen before 2030. However, if we look at future Indian HFC emissions, we find that most of the emissions happen after 2030. The same is true for other large and rapidly developing countries like Bangladesh and Pakistan. In fact, in the African nations, HFC emissions might start growing in a big way only beyond 2045-50. The potential growth trajectories of HFC emissions in different countries is a very nuanced yet critical piece of information. The Indian proposal, as it proposes a freeze in HFC consumption in 2030, will lead to a significant decline in cumulative HFC emissions for India and other developing economies where large increase happens only post 2030. Where the Indian proposal is not effective is China. If the North American proposal were adopted, then



it will lead to a significant decline in Chinese HFC emissions also. CEEW's analysis indicates that the Indian proposal would be effective in mitigating 39% of cumulative Chinese HFC emissions between 2015 and 2050, while the North American proposal would mitigate the cumulative emissions by 72%. Since almost one-third of global HFC emissions are likely to come from China in 2050, the two proposals will end up having a very different impact on Article 5 countries!

It is, therefore, critical to have a detailed view of individual Article 5 countries. Grouping China with India and other economies implies that any assessment of HFC mitigation for overall Article 5 grouping will hide the implications for different countries within this grouping. In the future, there will be more analysis of the implications of different amendment proposals. It is important for all these assessments to highlight the differential impact of respective proposals on China, India and other major developing countries for informing policy research and the international negotiations process.

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