

WHY INDIA NEEDS A PLAN FOR CLIMATE TALKS

Relevant for: Environment | Topic: Environmental Conservation, Sustainable Development, and EIA

At a time when the government is battling a covid-19 surge and trying to nurse an economic recovery, it may seem odd to focus on longer-term issues such as climate change. But the global climate change agenda leaves us with no option.

The 26th Conference of Parties of the United Nations Framework Convention on Climate Change (UNFCCC), which will review the experience since the Paris agreement of 2015, is to be held in November 2021 (CoP 26). Before that is US President Joe Biden's climate summit in April and the G7 Summit in June—Prime Minister Narendra Modi has been invited to both of these summits.

The five years since Paris have seen some positive developments. Public awareness about the dangers of climate change has increased all over the world; the growth of solar energy has been impressive; and electric vehicles have made more progress than once thought likely. However, the goal of limiting global warming above pre-industrial levels to "well below 2°C, and ideally to 1.5°C" is nowhere in sight.

Instead, the world looks set for warming of at least 3.2°C, which will be disastrous. We also know that India would be among the worst sufferers.

There is much that countries can do to reduce emissions. This includes rational energy pricing to encourage energy-efficient choices; carbon pricing to incentivise a shift from fossil fuels to green energy; upgrading the efficiency and cleanliness of coal-based thermal plants, combined with a phasing down of these plants; setting higher energy-efficiency standards for buildings; sensible urban planning to reduce the dependence on personalised motor transport; increasing forest cover, etc.

All these issues are in the realm of domestic policy and CoP 26 can only encourage governments to act. However, there are two areas where it can give a strong signal. One is to call for stronger national targets for reducing emissions while leaving it to the governments to do what needs to be done. The other is to agree on mechanisms for financing the massive investments that are needed in developing countries in order to reduce emissions.

Setting national targets

Advanced countries have begun to push for setting stronger national targets by announcing 2050 as their target date for reaching net-zero emissions. China has declared that it will get there a little later by 2060. As the fourth-largest emitter after China, the US and Europe, India is bound to come under pressure to announce a net-zero target date.

Any national targets we agree have to meet the test of "climate justice", which has been an important part of the negotiations thus far. The IPCC has reported that global emissions must drop to zero by 2050 if global warming is to be limited to 1.5° C above pre-industrial levels. But this does not mean all countries must reach net-zero by that date.

Climate justice requires that the advanced countries get there before 2050, allowing the developing countries to get there later. The developed countries should perhaps even aim at becoming net negative by 2050, which may become feasible if technologies for carbon capture from the air become economic and afforestation can be increased.

Setting national targets solely in terms of net-zero dates is also potentially misleading. Since global warming results from an increase in carbon concentration in the atmosphere, the logical approach should be to determine the global carbon budget in terms of the additional carbon that can be added to the atmosphere given the global warming target; agree upon a fair way of allocating the global budget across countries; and define an emissions trajectory for each country that is consistent with its share of the budget.

The important point is that the trajectory must keep emissions within the country's budget. There is no merit in a country reaching the net-zero date on schedule if it blows its carbon budget in the process.

We know the global carbon budget from the work of the IPCC. The carbon that can be released from 2020 onwards cannot exceed 985 gigatonnes (Gt) if global warming is to be limited to 2°C. At current rates of emission, this global budget would be exhausted by 2043. If the target is to limit the rise to 1.5° C, the global carbon budget is only 395 Gt, which would be exhausted in nine years at current rates of emission.

Converting the global carbon budget into "fair" carbon budgets for each country, from which country trajectories can be derived, presents a major problem since there is no international agreement on what might be an acceptable way of determining country shares.

Hypothetical carbon budgets

Michael Raupach et al (2014) have pointed out that the most equitable approach would be to give each country its share in world population. The most inequitable would be to determine the share based on current emissions. They have suggested a compromise that gives equal weights to the two criteria.

Chart 1 takes the carbon budgets for the four large emitters (US, Europe, China, India) and projects an emissions trajectory for each based on a formula that takes into account the current level of emissions and their recent growth. The projected emissions exhaust the carbon budget, reaching net-zero asymptotically.

Where emissions have already peaked and begun to decline—Europe and the US—they are projected to continue to decline in the future. Where emissions are low and rising, as in India, and growth compulsions call for more space for larger emissions, the projection allows for emissions to increase for a while, reach a peak, and then decline.

The 2°C target requires the US to reduce its emissions by 4.9% per year in the next 10 years and Europe by 3.2% per year in the same period. These are faster rates of reduction than the decline of about 1% per year achieved in recent years.

If the target is to limit warming to 1.5°C, then the rates of reduction required are 16.8% for the US and 11% for Europe.

For China, the projection shows a reduction in emissions by about 2.9% per year for the 2°C target compared with a growth of 0.7 % per year in recent years. For the 1.5°C target a much faster rate of reduction of 11.9% would be needed.

For India, the 2°C target would allow India's emissions to rise and peak in 2026, but the increase allowed is only 0.7% per year, much slower than the 3.75% average growth rate of emissions in recent years. In the 1.5°C target scenario, India would have to peak much sooner, and reduce emissions by 3.3% per year over the next 10 years. In this scenario, India's net-zero date is

2081.

These projections are based on the Raupach formula giving equal weights for current emission share and population share. Moving the needle to give greater weight to population share would imply that advanced countries would have to get to net-zero before 2050.

Implications for India

In the absence of agreed country carbon budgets, one way of determining a net-zero date for India is to take China's self-declared net-zero date of 2060 as a reference and argue that we should reasonably be expected to reach net-zero when our per capita GDP reaches the same level as China will have reached by 2060.

The OECD long-term projections of growth in per capita GDP for China and India suggest India would get to China's 2060 level of per capita GDP sometime around 2082.

Since net-zero dates far into the future are of little use in monitoring performance, it is more useful to set targets for the next 10 or 15 years or so and then revise them on the basis of experience. Given India's very low levels of emissions per capita, we need to present our case for a period of rising emissions for some time, peaking at a certain point, and declining thereafter. This aspect has been emphasised by researchers such as Vaibhav Chaturvedi in the Council for Energy Environment and Water and Rahul Tongia in Center for Social and Economic Progress.

Ideally, NITI Aayog should study the many global climate change models which are in use and which provide different estimates of emissions reduction by major countries, consult relevant stakeholders, and come up with a feasible path ahead for reducing total emissions.

With almost 80% of our electricity coming from coal, we should also consider announcing a national target for phasing down coal-based generation of electricity. This is necessary not only to reduce carbon emissions, but also to control air pollution. Phasing down will be difficult but we do need to set some quantitative target and undertake energy planning.

On financing, where the global community could really help in containing global warming is by putting in place mechanisms for financial support to developing countries that want to build the infrastructure that is needed for a low emissions pathway. Performance in this area has been disappointing.

The Paris agreement envisaged climate-related finance for developing countries being ramped up to \$100 billion per year by 2020. The OECD estimates suggest that the actual flow was only \$79 billion in 2018, and it is not clear how much of this was additional and how much is a redirection of existing flows.

There is little doubt that if developing countries are to transit to a low emissions path, they will need much larger resources than they have. The additional investments in the energy sector needed in developing countries are estimated to exceed \$400 billion per year between 2016 and 2050 even to meet the 2°C target. In addition, these countries have to bear adaptation costs that the UN estimates at about \$70 billion per year, rising to \$390 billion by 2050.

These are large amounts, but they are not impossible given the size of the stimulus packages unveiled by advanced countries to cope with the short run effect of the pandemic. With the world awash with liquidity, and central banks promising a prolonged period of low interest rates, it should be possible to use the existing multilateral institutions to channel much larger volumes of

finance for the development of green infrastructure.

This would encourage developing countries to take stronger steps to invest in low carbon infrastructure. Every year's delay in this only locks the developing countries further on a high emissions path. Increased investments in these areas in developing countries would also impart a much-needed expansionary stimulus to the global economy.

We conclude that limiting global warming to 1.5°C will require advanced countries to reach net-zero well before 2050 while developing countries are allowed more time to get there. This will have the advantage of ensuring faster development of technology which, in turn, will help developing countries make their own transition.

India could make quantitative commitments on a peaking date for emissions and perhaps announce a plan to phase down coal-based electricity generation. Needless to say, we should make clear that our national targets can only be achieved as part of a global agreement in which advanced countries do their bit.

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