

# A low-carbon future through sector-led change

*In India, a sector-led, action-based approach could provide the framework to drive low-carbon transformation*

*Authors: Ashok Sreenivas, Navroz K. Dubash Rahul Tongia*

*A version of this article was published by The Hindu on 21 April 2021, and can be accessed on the following link: <https://www.thehindu.com/opinion/lead/a-low-carbon-future-through-sector-led-change/article34370463.ece>*

In the build-up to the 'Leaders' Climate Summit' organised by the United States this week (April 22-23), there has been a flurry of articles about whether India should announce a 'net-zero' emissions target, and by when. The Intergovernmental Panel on Climate Change (IPCC) 1.5°C report called for global carbon emissions to reach net-zero by 2050, which the pressure cooker of climate diplomacy has quickly transformed into a call for all countries to announce 2050 as the net-zero target year. Yet, global net zero may require some countries reaching net-zero before 2050 in order for others to have some additional time. Since a disproportionate share of the carbon space has been used up by developed countries, it is important that they act boldly at home, to match the vigour of their diplomatic efforts.

Nonetheless, as a climate-vulnerable country, India must also up its game to contribute to limiting global temperature rise, ideally below 1.5°C. While doing so, it should not lose sight of the history of global climate negotiations and its own developmental needs. Though a large country and economy, we are still a very poor country with a significant development deficit - for example, our per-capita carbon emissions are less than half the world average.

## **What India must do**

So, what is the way forward for India? Saying India will take only modest steps until richer countries do more is not viable in the context of a global climate crisis. Yet, announcing an Indian 2050 net-zero commitment risks taking on a much heavier burden of decarbonisation than many wealthier countries, and could seriously compromise India's development needs.

We suggest a third path, focused on concrete, near-term sectoral transformations through aggressive adoption of technologies that are within our reach, and an earnest effort to avoid high carbon lock-ins. This is best accomplished by focusing on sectoral low-carbon development pathways that combine competitiveness, job-creation, distributional justice and low pollution in key areas where India is already changing rapidly. This approach is directionally consistent with India moving towards net-zero, which should be our long-term objective. Over time, India can and should get more specific about future economy-wide net-zero targets and dates. Here, we detail what such an approach would look like, by laying out the contours of an enhanced

national pledge for the electricity sector, to illustrate how it can be both ambitious and in India's interest. A similar approach should be adopted for other sectors.

## **De-carbonise power sector**

To achieve net-zero emissions, a key piece of the puzzle is to decarbonise the electricity sector, which is the single largest source (about 40%) of India's greenhouse gas emissions. De-carbonised electricity would also allow India to undertake transformational changes in urbanisation and industrial development, for example by expanding the use of electricity for transport, and by integrating electric systems into urban planning.

So far, our efforts in the electricity sector have focused on expanding renewable electricity capacity, with targets growing by leaps and bounds from 20GW of solar to 175GW of renewable capacity by 2022, further growing to 450GW of renewable capacity by 2030. While useful as a direction of travel, India now needs to shift gears to a comprehensive re-imagination of electricity and its role in our economy and society.

One way to do this is to go beyond expanding renewables to limiting the expansion of coal-based electricity capacity. This will not be easy: coal provides firm, dispatchable power and accounts for roughly 75% of electricity today; supports the economy of key regions; and is tied to sectors such as banking and railways. These connections need to be unravelled to truly shift to a decarbonised future.

## **Ceiling for coal power**

A first, bold, step would be to pledge that India will not grow its coal-fired power capacity beyond what is already announced, and reach peak coal electricity capacity by 2030, while striving to make coal-based generation cleaner and more efficient. There is a strong rationale for this: coal is increasingly uneconomic and phasing it out over time will bring local gains, such as reduced air pollution, aside from climate mitigation. Such a pledge would give full scope for development of renewable energy and storage, and send a strong signal to investors.

A second, necessary step is to create a multi-stakeholder Just Transition Commission representing all levels of government and the affected communities to ensure decent livelihood opportunities beyond coal in India's coal belt. This is necessary because the transition costs of a brighter low-carbon future should not fall on the backs of India's poor.

Third, a low-carbon electricity future will not be realised without addressing existing problems of the sector such as the poor finances and management of distribution companies, which requires deep changes and overcoming entrenched interests.

Finally, India will need to work hard to become a leader in technologies of the future such as electricity storage, smart grids, and technologies that enable the electrification of other sectors such as transportation. Through careful partnership with the private sector, including tools such

as production-linked incentives, India should use the electricity transition to aim for job creation and global competitiveness in these key areas.

Thus, an electricity-supply focused component of India's climate pledge could provide the overarching framework to envision and drive transformative change.

### **Improve energy services**

Enhancing the efficiency of electricity use is an important complement to decarbonising electricity supply. Growing urbanisation and uptake of electricity services offer a good opportunity to shape energy consumption within buildings through proactive measures. Cooling needs are expected to increase rapidly with rising incomes and temperatures. Air conditioners, fans and refrigerators together consume about 60% of the electricity in households. Today, the average fan sold in the market consumes more than twice what an efficient fan does, and an average refrigerator about 35% more. India could set aggressive targets of, say, 80% of air conditioner sales, and 50% of fan and refrigerator sales in 2030, being in the most efficient bracket. In addition to reducing green house gas emissions, this would have the benefit of lowering consumer electricity bills. India can leverage this transition too as an opportunity to become a global leader in production of clean appliances.

Such a sector-by-sector approach, which can and should be developed for other sectors, can demonstrate concrete, yet ambitious, domestic action that sets India on the path toward net zero emissions. It empowers India to insist that developed countries complement their distant net-zero targets by enacting concrete near-term measures that are less reliant on unsure offsets. This approach also allows India to nimbly adapt its sectoral transition plans as technologies mature and enable it to ratchet up its pledges periodically as required by the Paris Agreement.

### **Forming timelines**

Going further, India may even consider committing to submit plausible pathways and timelines to achieving net-zero emissions as part of its future pledges. This would allow India adequate time to undertake detailed assessments of its development needs and low-carbon opportunities, the possible pace of technological developments, the seriousness of the net-zero actions by developed countries, and potential geo-political and geo-economic risks of over-dependence on certain countries for technologies or materials. India can also use this period to develop a strategic road map to enhance its own technology and manufacturing competence as part of the global clean energy supply chain, to gain benefits of employment and export revenues. Such an integrated approach, which is ambitious, credible and rooted in our developmental needs — including climate mitigation needs — will represent an ambitious, forward-looking and results-oriented India.

*Ashok Sreenivas is a Senior Fellow at Prayas (Energy Group). Navroz K. Dubash is a Professor at the Centre for Policy Research. Rahul Tongia is Senior Fellow at the Centre for Social and Economic Progress.*