

New Options to Shape India's Narrative in Climate Negotiations Technology Partnerships, Differentiation, and Risk Assessments

India will be one of the last major economies to submit its Intended Nationally Determined Contributions (INDC) to the UN Framework Convention on Climate Change (UNFCCC). It will, therefore, attract a lot of attention and scrutiny, both from other parties to the Convention and from observer institutions, civil society organisations, research institutes and the private sector. India must not assume disproportionate burden in the response to climate change. At the same time, it runs the risk of being (wrongly) perceived as obstructionist.

In order to shape a more forward-looking narrative of its role in the global climate change discourse, India has to answer three questions:

- a. From where will the technology and finance for India's low-carbon strategies come?
- b. What kinds of alliances will serve which interests?
- c. How will India find a balance between mitigation demands and adaptation needs?

The answer to the first question lies in developing innovative partnerships, which could both showcase the range of clean energy work being undertaken in India and also attract additional investments. The second question urges an evaluation of whether existing allies are entirely suited to purpose, or whether more nuance is needed in how India positions itself. In answering the third question, India would need to count the resources it is already expending on adaptation and evaluate risks, which threaten its social and economic resilience. In response to these questions, below we outline four ideas (explained in greater detail in the annexures), which are entirely consistent with India's stated interests in climate change as well as its domestic policies.

1. Leadership via effective climate technology partnerships

Technology transfer (and associated financing) has been a key demand throughout the two decades of climate negotiations. However, thanks to prohibitive costs, restrictive intellectual property rights, continued lack of capacity for domestic R&D or for cross-border joint ventures, and insufficient capital to underwrite risks, there has been persistent failure in facilitating the development and transfer of climate-friendly technologies. Over the past decade at least 30 technology partnerships have been initiated. Most have been too limited in scope to achieve significant progress. More effective partnerships are needed.

Partnership on Energy Access: India should create a new multi-country partnership to promote much greater decentralised energy production to satisfy the potential demand from the two billion poor people who still lack access to basic modern energy. India has hundreds of entrepreneurs working in this sector and showcasing their work would draw significant credit to India. The partnership, with other developing countries as well as developed ones, would

supply initial working capital for far-flung smaller entrepreneurs in developing countries, help link them to larger investors such as pension funds, establish centres to certify these new technologies, and create model regulatory codes. Energy access for all is necessary before many developing countries will accept economy-wide emissions limits.

Partnership on Energy Storage and Grid Balancing: With renewable energy expected to account for 20%-30% of India's electricity mix by 2030, there is an urgent need for improved technologies for energy storage and grid balancing. India should co-chair a new multi-country partnership to speed up deployment of these technologies, which would give its research laboratories and public and private sector firms an opportunity to collaborate with the world's leading labs and companies (in France, Japan, Sweden and the United States) working on energy storage. The partnership could target research and development on specific issues-increasing the life of batteries, their energy density, or the efficiency of the charging/discharging process-and Indian firms could be joint owners of new intellectual property. India offers significant market potential to both test new technologies and commercialise viable ones. With this partnership India would have an opportunity to be at the frontiers of disruptive technological development.

2. Several major economies are under committing

- During the 15th COP in Copenhagen, the European Union had declared a conditional GHG reduction target of 30% below 1990 levels by 2020, conditional on commitments made by other countries in proportion to the one made by the EU. In late October 2014, the EU announced its intention of reducing the region's GHG emissions by 40% over 1990 levels by 2030 and 80%-95% by 2050. While the 2030 and 2050 targets are aggressive, they remain below the trajectory, which would materialize if the 30% reduction target were followed.
- The United States in its INDC set a target of 20% renewable energy in its total final energy consumption. This is significantly lower than the projection made by the International Renewable Energy Agency (IRENA), which suggests that renewables could contribute 27.5% of the total final energy consumption in the United States in 2030.
- Brazil, in a US–Brazil joint statement in June 2015, committed to 20% non-hydro renewable energy contribution to their total final energy consumption in 2030. However this is much lower than the projected share of renewable energy in Brazil's total final energy consumption in 2030, as assessed by the International Energy Agency (IEA) and the International Renewable Energy Agency (IRENA).
- China has committed to 20% non-fossil contribution to total primary energy demand in its recently submitted INDC. This commitment includes nuclear power and does not detail the share of energy from nuclear and renewable energy sources. IRENA projections suggest a 21% share of renewables in China's total primary energy demand by 2030. Thus, the Chinese INDC commitment is significantly short of the proposed renewable energy share.

- India witnessed growth in per capita GDP (PPP) of 121% between 2000 and 2010, but this occurred with a concomitant growth in absolute emissions of 69%. Chinese incomes, on the other hand, grew at less than twice India's growth rate at 216% but registered more than double the growth rate in emissions (143%).
- While both India and China aim to reduce their emissions intensities, and have done so, China's emission intensity has been higher in the past and is projected to be higher than that of India even in 2020.
- In 2010, the share of renewable energy, as a share of electricity generation, in India was 4.4%, far ahead of China at 1.7%. Even if large hydropower were included, China's share of renewable energy was only marginally more than India's in 2010. In 2020 India's share, excluding large hydro, could already rise to 20% but China has committed to only 20% non-fossil energy by 2030.

3. India's bold proposal for HFC phase-down should delink from China

- India recently submitted an amendment proposal for phasing down HFCs under the Montreal Protocol. CEEW estimates that if the Indian proposal were accepted, Indian HFC emissions would peak around 2035-36 and decline to 15% of the peak in 2055-56.
- About 4.2 GtCO₂eq. would be avoided between 2010 and 2050, or 64% of the total HFCs that will be emitted between 2010 and 2050 in India.
- For the second half of this century, India's avoided HFC emissions would amount to almost 41 GtCO₂eq. That is similar to total global CO₂ emissions in 2014.
- **India should delink China's HFC reduction obligations from that imposed on other Article 5 countries.** CEEW's analysis indicates that under the Indian proposal, 39% of cumulative Chinese HFC emissions between 2015 and 2050 could be avoided; the North American proposal would mitigate 72% of cumulative Chinese HFC emissions. 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 Montreal Protocol Article 5 countries.

4. Climate risk assessments to balance adaptation and mitigation

- The Government of India has around 21 development programmes relevant to climate change adaptation, covering areas such as forests, agriculture, water, ecosystems, infrastructure, livelihoods and health. There are many other programmes at the state level. The central government, alone, spent INR 760 billion (USD13 billion) on these programmes in 2013-14 or 0.7% of GDP. Against this, multilateral and bilateral fund contributions towards adaptation activities amount to ~3% of total domestic financing.
- Over the last 5 years (2009-2014), direct damage costs due to floods, cyclones and temperature extremes in India are estimated to be about INR 1,000 billion (USD 17 billion), in the form of government support.
- CEEW analysts estimate climate impacts could impose economic losses on India in the range of INR 12,480 billion (USD 208 billion) for agriculture and INR 1,980 billion (USD 33 billion) for additional power generation in 2050.

- Meanwhile, the world is well on track to overshoot the international targets of keeping temperature rise within 2°C. From 4°C, the risks of adverse climate change impacts would significantly shift with severe consequences for India.
- On a high emission pathway, flooding in the Ganges basin could be six times more frequent, becoming a 1 in 5 year event, over the course of the century.
- With 1m of global sea level rise, the probability of what is now a ‘100-year flood event’ becomes about 1000 times more likely in Kolkata.
- At worst, 7% of South Asia’s cropland could be affected by drought in 2050.
- **India must demand financing for adaptation activities.** Over the next 5 years, state climate action plans estimate that required adaptation budget will be about INR 10,000 billion (USD 167 billion). Additional costs for infrastructure adaptation of net fixed capital assets (built from 2008 to 2013) will be around INR 11,000 billion (USD 183 billion). More intensive climate change will increase these further. The cumulative adaptation requirement is therefore a significant proportion of annual GDP of India.
- **India should co-chair a multi-country partnership on biennial climate risk assessments.** The decision on how much to spend on mitigation versus adaptation will need continuous risk assessments. Such an exercise would:
 - Apply the principles of risk assessment, focusing on the worst-case scenarios, considering even low probability but high impact events, and take a holistic view of direct as well as systemic risks;
 - Broaden participation in the risk assessment process to include leaders and decision-makers (to define objectives and interests), scientists (to assess direct impacts), and experts in national security, politics, technology, economics, finance and insurance (to assess systemic impacts);
 - Report to the highest decision-making authorities.