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## The Indian approach to climate and energy policy

BY DIVYA BADAMI RAO AND M. V. RAMANA | 3 JULY 2008

At the end of the [thirteenth meeting](#) of the U.N. Framework Convention on Climate Change that took place in Bali last December, the Indian delegation was relieved, happy even. [According to Kapil Sibal](#), India's minister for science and technology and head of the delegation, "India did not have to give any commitment on reduction of greenhouse gases to the world. We have achieved our goals." Such statements may explain the *Economist's* recent observation that "India has acquired an ugly reputation on the global front against climate change. Among big countries, perhaps only America and Russia are considered more obdurate."

Only a little while ago, China was viewed similarly. Like India, it had traditionally avoided any kind of emission-reduction commitments, citing the need to rely on cheap fossil fuels to meet its development goals. But this is no longer the case: "In the past couple of years, Chinese officials have begun sounding like converts to the climate-change cause," the same *Economist* article stated. China's target is to reduce its energy intensity (energy used per dollar of gross domestic product generated) to 20 percent below 2005 levels by 2010 and increase the share of renewable sources in its electricity generation capacity to 20 percent by 2020. In June 2007, the Chinese government released a [National Climate Change Program](#) that outlines the steps Beijing will take to meet these targets, as well as its plans to support adaptation.

Because of China's policy shift, India is finding itself somewhat isolated at international negotiations. More pressure is coming from the United States, which refuses to commit to any emission reductions without similar binding commitments from China and India. Along with China's newfound stewardship, this international pressure seems to have finally prompted the Indian government to [establish](#) its own Council on Climate Change--a high-level group of experts and senior government officials to advise New Delhi on measures it can take to mitigate and adapt to climate change.

On June 30, the council released India's [National Action Plan on Climate Change](#). The 47-page document primarily offers a list of eight technological efforts, the pride of place being given to research and development of solar energy. But staying true

to India's stance at Bali, the report doesn't set any concrete numerical goals for emission reductions--or even for energy intensity.

A major point of contention in Bali was whether, in the absence of concrete funding by developed countries, developing countries would agree to commit themselves to any emissions reductions. Despite pressure from the United States, the final text of the [Bali road map](#) pledged developing country parties to the framework convention to "consider" nationally appropriate mitigation actions "in the context of sustainable development, supported and enabled by technology, financing, and capacity-building, in a measurable, reportable, and verifiable manner."

Note the use of the word "actions," as opposed to commitments, and the linkage between actions and "support" for such actions (implicitly by developed countries), especially financing. Indian diplomats played an important role in placing the clause "measurable, reportable, and verifiable" at the end--the implication being that any mitigation actions taken by India that are "measurable, reportable, and verifiable" should be supported by international funding. This position makes it difficult for India to commit to any such climate-mitigation actions--and emission targets would certainly fit that description--unilaterally.

Since the Bali meeting, members of India's climate council have argued publicly that the cost estimates of even modest emission reductions are so high that India would have to cut expenditures on traditional development activities such as building schools and hospitals to afford them--obviously, an unacceptable option within the country.

The other argument against taking on emission targets is that India emits just 4 percent of global emissions, and therefore, its actions shouldn't be of major concern. Prodipto Ghosh, a council member, [wrote](#) in the *Indian Express*, "If India were to eliminate all its [greenhouse gas] emissions, essentially by going back to the Stone Age, it would hardly matter for the climate change impacts on India, or indeed, anywhere else!"

That may be true today, but India's emissions are likely to become more significant in the coming decades. In its 2006 World Energy Outlook, the International Energy Agency (IEA) estimated that developing countries will overtake member nations of the Organisation for Economic Co-operation and Development, i.e. the wealthier nations, sometime around 2020 in annual carbon dioxide emissions. And from 2005 to 2030, the IEA [projects](#) that India and China alone will contribute 56 percent of the increase in projected worldwide emissions. The United States believes that such projections are ample reason for India and other developing nations to commit to measures that would help them avoid reaching these emission levels.

But the Indian government's preference, as well as that of many other developing countries, is to measure accountability for climate mitigation in terms of the past. For example, between 1900 and 1999, carbon-dioxide emissions from fossil-fuel

combustion in China, India, and other developing countries in Asia together accounted for only 12.2 percent of total global emissions, while the United States accounted for 30.3 percent, the European Union contributed 27.7 percent, and the former Soviet Union 13.7 percent, [according to the World Resources Institute](#). Even when projected to 2030, the emissions ratio [doesn't change much](#). This difference was explicitly acknowledged in the 1997 Kyoto Protocol, which established "legally binding" reductions in greenhouse gas emissions for developed countries such as the United States and Japan but not developing countries, most notably India and China.

Delineating responsibility for climate mitigation by using an analysis of per-capita emissions makes developing countries less culpable still. Indian interlocutors also stress that while India's overall emissions will increase, it will be because of the combined total emissions of a far larger national population--not because Indians have intrinsically energy-intensive lifestyles. As of 2005, India's annual emissions [work out](#) to less than 1.1 tons of carbon dioxide per capita; in the United States, it's more than 20 tons per capita. That's a big gap that won't be closing any time soon.

While these arguments may make it sound as though India is ethically justified in refusing to curtail emissions for the sake of its development, the problem is that the energy policies that the government is defending are *not* justifiable--neither on the basis of efficiency, equity, nor environmental sustainability. The hope amongst those desiring a more sound energy policy, especially independent analysts, is that the pressure on India to devise a climate plan of action will bring the government's historically poor energy and development policies into sharper focus.

[Energy planning](#) in India has resulted in an electricity sector that doesn't provide access for millions of rural inhabitants, proves unreliable even for those who have access, and negatively impacts local environments, disrupting the lives and livelihoods of untold millions. For evidence of the latter, see this [photo essay](#) on coal and uranium mining in India, this World Bank [report](#) on a power plant run by India's National Thermal Power Corporation, and Indian novelist Arundhati Roy's [writing](#) on the impact of dams on villages and indigenous populations.

Unfortunately, the future policies the government is considering are no better.

Equity has been a prime casualty. Even though energy projects are often constructed in the name of poverty alleviation and rural development, they're largely focused on meeting the demands of the urban rich. (Note "demands" should be differentiated from the normative term "needs.") Therefore, it shouldn't be surprising that even official estimates show that around [56 percent of rural households](#) in the country didn't have electricity in 2000. These residents live without adequate lighting, and many spend hours each week collecting firewood because they [don't have access to modern cooking fuels](#). An October 2007 Greenpeace [report](#) shows how the rich in India have much higher carbon emissions compared to the poor.

Not only do the poor and marginalized in India not have access to electricity, they also often face the brunt of the [negative consequences](#) of generating electricity for the rich. In a densely populated country such as India, a significant fraction of the population is directly dependent on land, water, and forests. Practically all large-scale electricity generation projects in the country--whether coal plants, nuclear plants, or large dams--impact these resources, and most recent large-scale electricity generation projects have met with stiff resistance from local inhabitants. (See "[Haripur: Land for Nuclear Plant](#)" and "Campaign Against Coal-Based Thermal Power Plant Project," an [online petition](#) signed by hundreds of people who oppose a proposed coal-based thermal power plant in India's Chamalapura Valley.) This alone makes it unlikely that massive expansion of large and centralized energy projects will materialize anytime soon.

Independent energy analysts have shown that it's possible to plan for energy and electricity in a way that caters to India's marginalized poor and that this makes financial sense. [Studies](#) using the development-focused end-use-oriented service-directed ([DEFENDUS](#)) paradigm for energy pioneered by the late [Amulya Reddy](#) and his collaborators have shown that in contrast to conventional energy planning, DEFENDUS could result in greater achievement of development objectives at far lower cost in a shorter time. And because of the emphasis on improved efficiency--as well as the use of decentralized and renewable sources of electricity generation wherever it made economic sense--it also resulted in enormous environmental gains.

The necessity of such methods of energy planning that pay attention not just to overall electricity generation targets but also equity and environmental sustainability is implicitly highlighted by the National Action Plan on Climate Change. While it includes no commitments to reduce emissions, the plan reiterates a non-numerical promise by Indian Prime Minister Manmohan Singh, first made at a June 2007 [meeting](#) of the G-8 in Germany that India's per-capita emissions wouldn't exceed the global average emissions of the developed countries.

An important international implication of this statement, which India's special envoy on climate change recently [highlighted](#), is that according to Singh's promise, India will limit its carbon emissions according to the scale of effort that the developed countries are themselves prepared to put in. "The more ambitious they are, the lower the limit that India would be prepared to accept. Thus, there is an inbuilt mutuality of incentive," the envoy stated. If Washington takes Singh's commitment seriously, it could be a small but significant step in breaking the impasse of mutual inaction.

Though mentioned again in the national action plan, the document fails to explore the implications of the prime minister's promise. If the promise is taken together with what scientists posit are the requirements for avoiding catastrophic climate change, then it would imply tight constraints on emissions for India. If the world were to agree on reducing its emissions to 80 percent below 1990 levels by 2050,

then in one plausible scenario, global emissions would have to peak by 2015 before declining to less than 20 billion tons of carbon dioxide by 2030 (and less than 6 tons by 2050). The United Nations projects that the world's population in 2030 will be about eight billion or more. If the allowed emissions were to be shared equally, the per-capita threshold will be 2.5 tons of carbon dioxide.

Compare this with what is projected by India's planners for its emissions. In its "Integrated Energy Policy" report, the Indian Planning Commission projects that electricity generation in India during the next 25 years will increase seven- to eightfold, involving a four- to fivefold increase in coal use and a nine- to tenfold increase in the use of natural gas. This would increase India's per-capita emissions to 3.6-5.5 tons of carbon dioxide by 2030.

Reducing per-capita emissions by 1 ton of carbon dioxide is hard enough, but it's much harder for a nation whose population is expected to be 1.5 billion people. This is the challenge that the national action plan should have identified and based its targets on. Turning around emission trends will not be easy, but the task will become harder the longer planning for it is delayed.

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